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The Effect of Reducing the Number of Tests in the Armed Services Vocational Aptitude Battery (ASVAB)

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The major goal of this research is to determine the effect on ASVAB classification efficiency of dropping the Numerical Operations (NO) and Coding Speed (CS) tests from the battery. If it could be shown that removing either or both of these tests would not significantly reduce the mean predicted performance (MPP) of ASVAB classification or would not affect gender and racial fairness of the battery, then removing these tests would become defensible.

Two data sets were used. The first set consisted of 150 job families containing 260,000 first-tour enlistees ,and the second set (a subset of the first) consisted of 66 job families containing 83,000 observations. The criterion data were Skill Qualification Test (SQT) data from FY1987-89.

Findings indicate that a significant loss in MPP would be incurred by reducing the 9-test battery to a 7-test battery by removing NO and CS. The loss is 6.2 percent for the 150 job family data set and 8.1 percent for the 66 job family data set. The loss incurred from dropping NO is much less than from dropping CS, but the combined loss of dropping both tests is significantly greater than dropping either test alone.

Dropping NO and CS would result in a greater loss of MPP for females than for the total sample. Dropping the two tests would not only increase gender unfairness of the battery, but would significantly reduce the accuracy of performance prediction for females. The pattern of loss for blacks is not as clear.

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EFFECT OF REDUCING THE NUMBER OF TESTS IN THE ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB)

VOLUME 1

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THE EFFECT OF REDUCING THE NUMBER OF TESTS IN THE ARMED SERVICES VOCATIONAL APTITUDE BATTERY

EXECUTIVE SUMMARY

Research Requirement

In a related research effort, the authors proposed a new classification system to replace the aptitude area composites presently used by the Army. The proposed system would use an invisible black-box first tier in which separate least squares estimate (LSE) composites are computed for each of 150 core Military Operational Specialties (MOS) representing the approximately 190 entry-level MOS. A visible second-tier system, in which 17 families encompass all MOS, is proposed for recruiting, counseling, the computing of minimum cut scores and administration. The proposed changes were based on an analysis of the classification efficiency of various assignment composites using operational Skill Qualification Tests (SQTs) as measures of job proficiency.

Another study dealt with the credibility of SQTs as the criterion measure. While hands-on performance measures are considered by many to be benchmarks of job proficiency, their costs in construction and administration make them prohibitively expensive for classification research that would necessarily include a great number of core jobs. The SQT was considered to be an adequate substitute for core technical proficiency (CTP: a composite of job-specific hands-on and job knowledge test scores) since findings showed that the same developmental decisions were reached with either criterion. Decisions to be made include the selection of tests for best assignment composites and the determination of weights for these tests.

In recent years, some groups within the selection and classification research community have suggested that the Numerical Operations (NO) and Coding Speed (CS) tests of the Armed Services Vocational Aptitude Battery (ASVAB) be dropped. (The ASVAB is used for selection and classification of U.S. enlisted military personnel.) Reasons sometimes given include that (1) these tests make, at best, little contribution to incremental validity of aptitude area composites used for selection; (2) eliminating these tests would save time and leave room for the addition of possible new tests to ASVAB; and (3) speeded tests are costly to maintain (e.g., in constructing alternate forms, especially, for computer-based administration). However, there is little or no data showing the effect of dropping these two tests on classification efficiency as measured by mean predicted performance (MPP) or the effect of dropping these tests on gender and racial fairness of assignment composites. (Fairness is traditionally defined as the absence of underprediction for the minority group for which discrimination potentially exists.) The

overall purpose of the present study, then, is to evaluate the impact of dropping these two tests in the context of the Army's proposed new two-tiered classification system.

Procedures

Two data sets were employed. The first set was composed of 150 job families with a sample of 260,000 first-tour enlistees. This data set is identical to the data set used to establish the two-tiered classification system under consideration for operational use. The second data set of 66 job families with 83,000 enlistees is identical to the data set used in an earlier demonstration study that examined the feasibility of using a two-tiered system. ASVAB and SQT scores for an accession cohort from FY 1987-1989 were available from official records.

A series of simulation-based comparisons are made between the operational nine-test ASVAB with eight-test ASVABs (without either NO or CS tests) and with a seven-test ASVAB (without both NO and CS). Classification efficiency is measured in terms of MPP after optimal assignment of recruits to job families are made. Optimal assignments are made using best-weighted composites as assignment variables. The simulation, using a triple cross-analysis design, provides completely unbiased estimates of MPP.

Findings

There is a significant loss of MPP of 6.2 percent in the total sample for the 150 job family and 8.7 percent for the 66 job family when ASVAB is reduced from a 9-test to a 7-test battery. In the 66 job family data set, where gender and race information is directly associated with each individual's score vector, a substantial loss of MPP for females and a lesser loss for blacks was found. The MPPs for job families which have the largest proportion of females show a reduction of .046 compared to an average loss of .018 for all job families. A pattern of loss for blacks similar to that of females is not as clear.

The overall conclusion, then, is that dropping both the NO and CS tests would significantly reduce the classification efficiency of both the first-tiered and second-tiered systems. The loss from dropping NO alone is much less than for dropping CS, but the combined loss of dropping both is significantly higher. Dropping these tests would not only significantly reduce the accuracy of predicted performance, but would greatly increase gender unfairness in some traditionally female job families.

ABBREVIATIONS

ASVAB	Armed Services Vocational Aptitude Battery
AV	Assignment Variable
CE	Classification Efficiency
CTP	Core Technical Proficiency
EV	Evaluation Variable
LP	Linear Programming
LSE	Least Squares Estimate
MOS	Military Occupational Specialty
MPP	Mean Predicted Performance
PV	Predictive Validity
SME	Subject Matter Expert
SQT	Skill Qualification Test

EFFECT OF REDUCING THE NUMBER OF TESTS IN THE ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB)

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EFFECT OF REDUCING THE NUMBER OF TESTS IN THE ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB)

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CONTENTS

EFFECT OF REDUCING THE NUMBER OF TESTS IN THE ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB)

Introduction

A. Background

In recent years some suggestions have been made in the Department of Defense (DOD) by the selection and classification research community that the number of tests in the ASVAB should be reduced from 9 to 7 tests. For many years the ASVAB has had 10 constituent tests, with the Word Knowledge and Paragraph Comprehension tests combined to form the verbal test. Thus, analyses of ASVAB are generally accomplished on a 9-test battery.

The candidate tests suggested for removal from the ASVAB are the two speeded tests, Numerical Operations (NO) and Coding Speed (CS). Reasons variously given for dropping these tests include that: (1) they make little contribution to the incremental validity of operational test composites or aptitude areas in the selection process; (2) dropping these tests would save testing time and better allow for the addition of new tests such as the experimental Assembling Objects (AO) test; and (3) it is difficult to construct alternate forms of speeded tests and their maintenance is cumbersome and costly.

It is important to point out, however, that no known study explicitly measures the effect of dropping one or the other or both of these two tests from ASVAB in terms of classification efficiency as contrasted to conventional selection efficiency.

Two studies show that the inclusion of NO and CS in optimally weighted test composites used for classification can make contributions to unbiased estimates of classification efficiency. Scholarios, Johnson and Zeidner (1994) conducted several simulation experiments in which tests were sequentially selected from among 29 ASVAB and experimental predictors to form tailored assignment composites that increased overall classification efficiency as measured by H_d, the Horst differential index (see Johnson, Zeidner, and Leaman (1992), p. 4). In the experiments, NO and CS were selected early for inclusion in assignment composites for most job families in the study, indicating that these speeded tests were potentially effective components of weighted composites in a classification system.

Zeidner, Johnson and Vladimirsky (1997) conducted several simulations in which tests for inclusion in assignment variables (AVs), determined as LSEs, were sequentially selected to maximize validity in terms of multiple correlation coefficients, or R. The early selection of CS and, to a lesser extent, NO to maximize R in AV test composites is another indication supporting their retention in ASVAB.

B. Objectives of the Study

The overall aim of the present study is to determine the contribution that the NO and CS tests make to the classification efficiency (CE) of ASVAB. More specifically, the objectives of the present study are to: (1) determine the change in mean predicted performance (MPP) of ASVAB resulting from the deletion of either NO or CS tests or of both; (2) determine the effect of assignment composites after deletion of either or both NO and CS for CE on gender and racial fairness; and (3) in the event either or both of the speeded tests were dropped, to provide conversion tables of weights and constants to use in directly transforming operational ASVAB test scores to statistical standard scores for use in the first tier and composite Army standard scores for use in the second tier of a two-tiered classification system.

Procedures

A. General Approach

The present study consists of a series of comparisons between the nine-test ASVAB with eight-test ASVABs (without either NO or CS) and with a seven-test ASVAB (without both NO and CS). The index used in judging the change in classification efficiency is mean predicted performance (MPP).

CE is measured in terms of MPP after simulated optimal assignment of recruits to job families are made. Optimal assignments in the cross samples are made using assignment variables (AVs) for which test weights have been obtained in an independent analysis sample. Assignment variables are based on the least squares estimates (LSEs) of the full set of 9 ASVAB tests or of the reduced set of 8 or 7 tests. The evaluation variables are obtained in a separate sample always using all 9 predictor tests and criterion scores within each job or job family to provide the best available estimate of criterion scores.

B. The Simulation Paradigm

In the simulated system, the assignment of a recruit to a job family optimizes the sum of all recruits' predicted performance scores for the job family to which each is assigned. A linear programming algorithm is used to maximize this total sum as the objective function, under the constraint of meeting quotas for each assignment target. These assignment targets are set proportionately to the accession numbers for the job families which are included in the analysis. In this study, the constraint was that allocation should conform proportionately to the actual operational distribution of enlistees to jobs in FY 1989, the most relevant year in terms of the data. For example, this data indicates, as reported in Table A1 in the Appendix, the infantryman MOS 11B would receive 12.5 percent, or 2,500, of the 20,000 enlistees assigned to the 150 jobs.

The general simulation paradigm used can be described in terms of three independent samples of recruits (Johnson, Zeidner & Vladimirsky, in preparation; Zeidner, Scholarios & Johnson, 1997). Each sample is assigned a different role in a triple cross-validation design: (1) Sample A has the analysis role in which jobs are clustered into job families and then weights are computed for the least squares estimates composites which are used as assignment variables; (2) Sample B has an evaluation role in which weights are computed for least squares estimate variables using all predictor tests and criterion scores within each job or job family to provide the best estimate of criterion scores; and (3) Sample C has a simulation role in which recruits are optimally assigned to job families using regression weights from Sample A to compute the assignment variables. The final mean predicted performance (MPP) scores on which the experimental evaluation is based are computed following assignment of the recruits from Sample C using regression weights from Sample B. Figure 1 illustrates this division of the total empirical sample into the three samples and the computation of final MPP results. It should be stressed that this design, a triple cross-analysis design, using three independent samples, produces completely unbiased results.

C. Data

The recruits for whom selection and assignment is being simulated are represented by sampling from a real data set provided by individuals possessing predictor and criterion scores. Several earlier differential assignment theory (DAT) simulation studies have relied on synthetic scores which represent the effect of selection from a youth population (e.g., Johnson & Zeidner, 1991; Johnson, Zeidner & Scholarios, in preparation; Scholarios, et al., 1994; Statman, 1992). By contrast, the present study uses empirical scores derived from Army test and criterion data sets. See Nord and Schmitz (1991) for a comparison of these two approaches.

The present study uses two different empirical data sets. The first data set, comprising Part A (and not to be confused with Sample A, etc), contains soldiers in the 150 job families of the first tier and again in the 17 job families of the second tier. This data set--the family structure and sample--is identical to the data set employed that led to the proposed new operational classification system (Zeidner, Johnson, Vladimirsky & Weldon, in preparation).

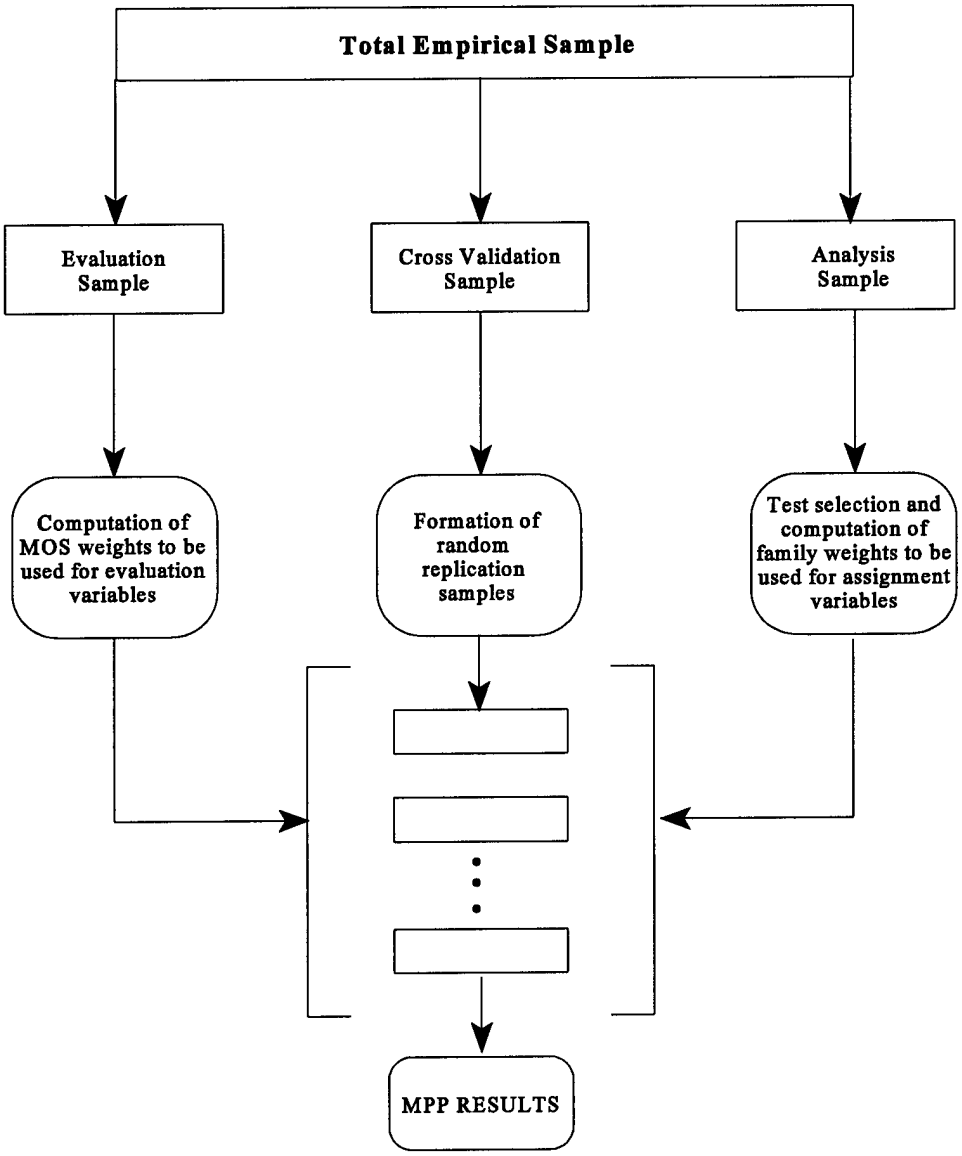

Figure 1 Generalized Research Design

The second data set, Part B, uses a 66 job family structure in the first tier and a set of 25 job families in the second tier. The second-tier system was designed to consist of relatively homogeneous job families. This data set is identical to the one used earlier to demonstrate the classification effectiveness of a two-tiered system (Johnson, Zeidner, Vladimirsky, in preparation) prior to the study leading to the proposed new operational system. The second data set is actually a subset of the data set used in Part A, but, unlike the larger data set, gender and race information is associated with each individual's test and criterion score vector.

Gender and race information for the 150 job family data set (Part A of the analysis) was available by job rather than by individual. Although the first set provides data on the largest number of different jobs obtainable and represents the operational system actually recommended, only the second data set (part B of the analysis) permitted further examination of gender and racial effects.

In the present study, for both Parts A and B, the AV and EV subsamples were randomly divided into two samples: one provides an AV source and the other provides an EV source. The simulation was then accomplished twice, reversing the roles of the AV and EV samples in the second simulation, a procedure that not only produces unbiased results, but also permits analysis of design issues. The MPP results are averaged across the two simulations. This design is shown in Figure 2 giving Part A subsample sizes. The total sample size for the 150 job families is 260,000 and the total sample size for 66 job families is 83,000.

D. Skill Qualification Test Data

There are about 190 entry-level military occupational specialties (MOS) in the Army. Each of these MOS is composed of one to five skill levels, with skill level 1 being the lowest and including paygrades E-1 through E-4. Prior to 1983, the SQT had both written and hands-on components measuring job proficiency in an MOS. After 1983, the SQT was designed only as a task-based paper-and-pencil test of job proficiency. The SQT program was canceled in 1991. Soldiers were required to take the SQT annually after completing 11 months or more of service. In the present research study, SQT scores for FY 1987-1989 were obtained from official records for the cohort sample. These SQT years were considered by ARI to be psychometrically good SQT years in terms of discriminability and reliability of the measures.

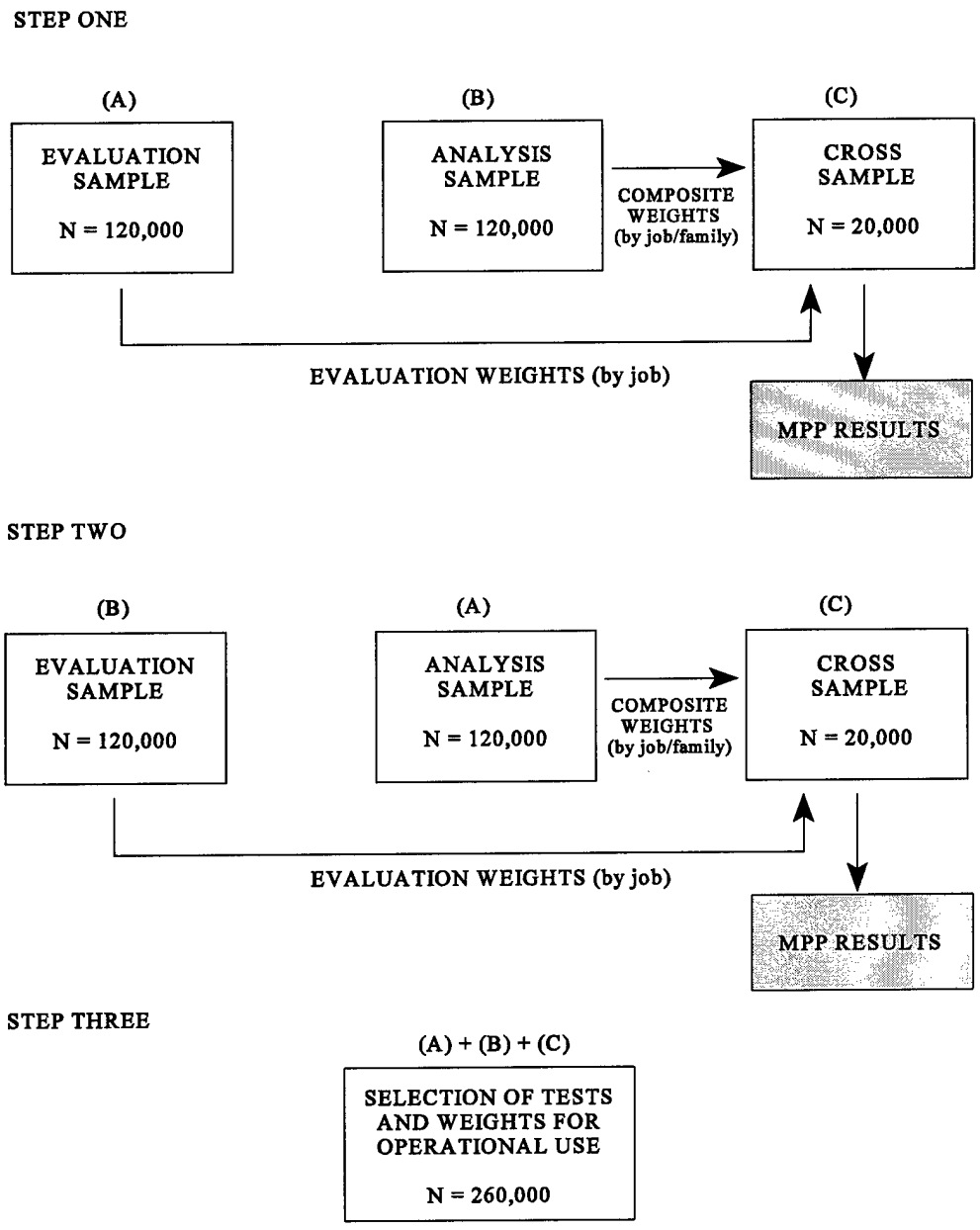

Figure 2 Triple Cross Analysis Design Sample Sizes

The SQT for an MOS were composed of significant task elements. The tasks to be measured were selected by subject matter experts (SMEs) using job analysis information and manuals. Test questions were standard four alternative multiple-choice items, with one correct answer. The tests were administered through a local Training Standards Office once each fiscal year during a three month Army-wide SQT period. The SQT scores were utilized in considering soldiers for promotion to the next higher skill level and to identify those that could be barred from reenlistment. A report by R. C. Campbell (1994) provides a history of the development and use of SQT.

The predictors consisted of the nine ASVAB tests standardized to have a mean of zero and a standard deviation of one in the Army input sample. The SQT scores in each MOS were also standardized (within each MOS) to have a mean of zero and a standard deviation of one.

E. Corrections for Attenuation and Restriction in Range

The population of soldiers entering the Army is the target population used to correct data in Samples A and B. Test intercorrelations and validities in both samples were corrected for attenuation and restriction in range separately by MOS to provide estimates of the Army input population. When the Army input is designated as the population in this way, restriction in range is attributable only to the operational classification and assignment process due to the impact of assignment to MOS from a common entry pool. No correction was made for restriction due to the selection process. Validities were also corrected for attenuation in the criterion variables prior to correcting for restriction in range. All regression weights and mean criterion scores were computed from the corrected intercorrelation matrices and relate to the Army input population rather than the youth population.

Results for Part A

A. Job Families

Table 1 (starting on page 32) shows the 150 first-tier job families included in the present study along with sample sizes for each family. Table 2 (starting on page 38) shows the 17 family second-tier system. Together, these tables show the two-tiered family structure proposed to replace the operational 9-job family structure. The Appendices in Volume 2 provide additional details of the Part A analyses including: (1) the acquisition numbers used in the simulations; (2) the MPPs and standard deviations (SDs) for each job/job family by each ASVAB condition; and (3) the transformation weights and constants used to convert operational ASVAB test scores to statistical standard scores used in the two-tiered system for each condition.

B. Classification Efficiency for the 150 Job Family, First-Tier System

Table 3 shows MPP results for eight assignment conditions. Classification efficiency is measured by MPP in the simulation process as described in the Procedures section. First, examining the results for the biased vs the unbiased condition, we find, as expected, much larger MPPs for the biased estimates than for the unbiased estimates across all conditions. The unbiased MPPs, based on the triple cross-analysis design, provide an accurate, totally uninflated estimate. Except for this table, shown for comparison purposes, all other results are shown only for the unbiased condition.

Table 3

MPPs for Four ASVAB Battery Conditions (First Tier)

	Biased		Unbiased	
Condition	MPP	SD	MPP	SD
9-test	.334	.012	.195	.013
8-test (without NO)	.321	.012	.193	.013
8-test (without CS)	.315	.012	.188	.013
7-test (without NO or CS)	.299	.012	.183	.013

Second, we examine the unbiased results for the four battery conditions. Table 3 shows a slight reduction in MPP as the battery size changes from 9-test to 8-test. We find a loss of .012 or 6.2 percent when battery size is reduced from 9-test to a 7-test battery. All critical ratios among the battery sizes are statistically significant at the .01 level. The NO test contributes less than the CS test to MPP, but their combined effect on MPP reduction is significantly larger. The SDs for all conditions remain the same.

As described in the Procedures section, we could not tie gender and race information with test and criterion scores for each individual in the 150 job family set. We, however, had operational data for our sample that provided gender and race percentages by family. Using this information, we divided our 150 job families into three groups of 50 each based on an ordered list of job families by concentration of females and by blacks. Thus the top 50 job families had the largest percentage of females and the bottom 50 had the lowest percentage. The job families with the largest concentration tend to be in the more traditional female occupations.

Table 4 shows the MPPs for the four ASVAB conditions ordered by percentage of females in each family group. The mean MPPs presented are based on the total sample of males and females in each of the three family groups. In the top 50 job families, those with the highest female concentrations, we find an MPP loss of .026 when the battery is reduced from 9-test to 7-test. This compares to a loss of

.012 across the 150 job families. This difference in MPP provides an indication that the AVs of females in some traditional female jobs may be more greatly reduced than the AVs of males in all jobs by dropping either the NO or CS test or both. The critical ratios of differences between the 9- and 7-test batteries for each group are statistically significant at the .01 level. This indicates that predicted performance scores (operational AVs) for females are less fair when the two tests are dropped.

Table 4

MPPs for Four ASVAB Conditions Ordered by Percentages of Females in Jobs (First Tier)

Jobs by Female Percentages	9-Test		8-Test (-NO)		8-Test (-CS)		7-Test (-NO/CS)		Diff. (9-7 Tests)
	M	SD	M	SD	M	SD	M	SD	
Top 50	.266	.124	.264	.119	.247	.125	.240	.120	.026
Mid 50	.359	.093	.365	.091	.363	.089	.358	.089	.001
Bottom 50	.067	.085	.059	.079	.059	.083	.052	.078	.015

Table 5 shows the MPPs for the four ASVAB conditions ordered by percentage of blacks in each first-tier job family. Here the results for job families with large concentrations of blacks are not as clear as for females. In Table 5, we find both MPP losses and gains in going from the 9-test to the 7-test condition. We also find very large SDs in each group of 50 job families, a result also found for each group of females ordered by concentration.

Table 5

MPPs for Four ASVAB Conditions Ordered by Percentages of Blacks in Jobs (First Tier)

Jobs by Black Percentages	9-Test		8-Test (-NO)		8-Test (-CS)		7-Test (-NO/CS)		Diff. (9-7 Tests)
	M	SD	M	SD	M	SD	M	SD	
Top 50	.176	.085	.179	.082	.166	.084	.160	.083	.016
Mid 50	.477	.087	.479	.087	.510	.078	.537	.092	-.060
Bottom 50	.074	.091	.067	.085	.067	.086	.058	.048	.016

C. Classification Efficiency for the 17 Job Family, Second-Tier System

Table 6 shows the MPPs for the four ASVAB conditions ordered by percentage of females in each of the 17 job families of the second tier. Percentage of females varied from 48.0 percent (CL1) to 2.8 percent (MM2) for non-combat job families. (The 17 job family names follow the naming pattern of the existing nine AA job families.) As noted in the Procedures section, the percentages for this first set are obtained from the actual operational data.

Table 6

MPPs for Four ASVAB Conditions Ordered by Percentages of Females in the 17 Job Families (Second Tier)

Family Name/ Cluster	Male N / %	Female N / %	Total N / %	9-Tests MPP/SD	8-Tests (-NO) MPP/SD	8-Tests (-CS) MPP/SD	7-Tests (-NO/CS) MPP/SD
CL1	16300	15618	31918	.301	.333	.282	.283
1	51.07	48.93	100	.176	.173	.181	.184
ST1	15506	5847	21353	.130	.174	.098	.161
15	72.62	27.38	100	.253	.252	.250	.233
ST2	6322	2181	8503	.358	.320	.294	.271
16	74.35	25.65	100	.203	.192	.208	.199
SC	7907	1671	9578	.064	.049	.062	.062
14	82.55	17.45	100	.101	.110	.106	.105
ST3	16622	3137	19759	-.055	-.041	-.027	-.087
17	84.12	15.88	100	.146	.127	.130	.138
EL2	9315	1723	11038	.415	.411	.384	.397
6	84.39	15.61	100	.169	.186	.183	.178
CL2	24006	4382	28388	.162	.152	.166	.162
2	84.56	15.44	100	.067	.063	.065	.063

MPPs for Four ASVAB Conditions Ordered by Percentages of Females in the 17 Job Families (Second Tier)

Family Name/ Cluster	Male N / %	Female N / %	Total N / %	9-Tests MPP/SD	8-Tests (-NO) MPP/SD	8-Tests (-CS) MPP/SD	7-Tests (-NO/CS) MPP/SD
OF	30855	4036	34891	.217	.232	.198	.196
13	88.43	11.57	100	.132	.116	.129	.123
EL1	13000	1664	14664	.294	.278	.288	.295
5	88.65	11.35	100	.237	.226	.243	.244
EL3	7066	726	7792	.392	.413	.349	.288
7	9.68	9.32	100	.238	.254	.246	.255
GM2	11632	876	12508	.096	.092	.092	.097
10	93.00	7.00	100	.196	.196	.196	.187
MM1	30712	1659	32371	.592	.610	.587	.596
11	94.88	5.12	100	.122	.113	.123	.125
GM1	10453	451	10904	.761	.772	.747	.757
9	95.86	4.14	100	.195	.183	.175	.167
MM2	9836	287	10123	.421	.440	.421	.412
12	97.16	2.84	100	.231	.206	.213	.218
CO2	27155	0	27155	.193	.173	.195	.184
4	100	0	100	.141	.127	.140	.120
CO1	51293	0	51293	-.162	-.181	-.170	-.195
3	100	0	100	.060	.059	.060	.056
FA	25723	0	25723	.369	.382	.380	.374
8	100	0	100	.131	.123	.117	.102

Table 7 shows the same type of information as Table 6, but ordered by percentage of blacks. Percentages of blacks range from 48.0 percent in the Clerical 1 job family to 8.1 percent in the Mechanical Maintenance 2 family.

Table 7

MPPs for the 17 Job Families Ordered by Percentages of Blacks in the 17 Job Families (Second Tier)

Family Name/ Cluster	Whites N / %	Blacks N / %	Total N / %	9-Tests MPP/SD	8-Tests (-NO) MPP/SD	8-Tests (-CS) MPP/SD	7-Tests (-NO/CS) MPP/SD
CL1	16585	15333	31918	.301	.333	.282	.283
1	51.96	48.04	100	.176	.173	.181	.184
CL2	15801	12587	28388	.162	.152	.166	.162
2	55.66	44.34	100	.067	.063	.065	.063
FA	15524	10199	25723	.369	.382	.380	.374
8	60.35	39.65	100	.131	.123	.117	.102
EL2	7206	3832	11038	.415	.411	.384	.397
6	65.28	34.72	100	.169	.186	.183	.178
EL1	9650	5014	14664	.294	.278	.288	.295
5	65.81	34.19	100	.237	.226	.243	.244
OF	23208	11683	34891	.217	.232	.198	.196
13	66.52	33.48	100	.132	.116	.129	.123
ST1	15370	5983	21353	.130	.174	.098	.161
15	71.98	28.02	100	.253	.252	.250	.233
GM2	9017	3491	12508	.096	.092	.092	.097
10	72.09	27.91	100	.196	.196	.196	.187
SC	7218	2360	9578	.064	.049	.062	.062
14	75.36	24.64	100	.101	.110	.106	.105

MPPs for the 17 Job Families Ordered by Percentages of Blacks in the 17 Job Families (Second Tier)

Family Name/ Cluster	Whites N / %	Blacks N / %	Total N / %	9-Tests MPP/SD	8-Tests (-NO) MPP/SD	8-Tests (-CS) MPP/SD	7-Tests (-NO/CS) MPP/SD
MM1	25368	7003	32371	.592	.610	.587	.596
11	78.37	21.63	100	.122	.113	.123	.125
GM1	8671	2233	10904	.761	.772	.747	.757
9	79.52	20.48	100	.195	.183	.175	.167
CO2	21975	5180	27155	.193	.173	.195	.184
4	80.92	19.08	100	.141	.127	.140	.120
EL3	6327	1465	7792	.392	.413	.349	.288
7	81.20	18.80	100	.238	.254	.246	.255
CO1	43422	7871	51293	-.162	-.181	-.170	-.195
3	84.65	15.35	100	.060	.059	.060	.056
ST2	7422	1081	8503	.358	.320	.294	.271
16	87.29	12.71	100	.203	.192	.208	.199
ST3	17298	2461	19759	-.055	-.041	-.027	-.087
17	87.54	12.46	100	.146	.127	.130	.138
MM2	9304	819	10123	.421	.440	.421	.412
12	91.91	8.09	100	.231	.206	.213	.218

Tables 8 and 9 compress the previous two tables and show only the MPPs for two ASVAB conditions (9-test and 7-test) for the 10 job families with the largest proportion of females and of blacks.

Table 8

MPPs for Two ASVAB Conditions for 10 Job Families with the Largest Proportion of Females (17 Job Families)

Job Family	Designation	% Female	9-Test	7-Test	Difference (9-7 Test)
CL1	001	48.9	.301	.283	.018
ST1	015	27.4	.130	.161	-.030
ST2	016	25.7	.358	.271	.087
SC	014	17.5	.064	.062	.002
ST3	017	15.9	-.055	-.087	.031
EL2	006	15.6	.415	.397	.018
CL2	002	15.4	.162	.162	.000
OF	013	11.6	.217	.196	.021
EL1	005	11.4	.294	.295	.001
EL3	007	9.3	.392	.288	.104

Nine of the ten job families with the largest concentration of females show a loss when tests are reduced from 9 to 7 by withholding NO and CS. Several losses are quite large, i.e., MPP is reduced by .104 for EL3 and by .087 for ST2. Again, the MPPs for the job families are based on the total number of males and females in each family. These data, as do the data for the first tier, provide an indication that in some families the AVs of females may be more greatly impacted than for males by dropping the NO and CS tests.

Table 9 shows the same type of information as Table 8, but ordered by percentage of blacks in each job family of the second tier. Unlike the job families with large concentrations of females, no distinct pattern is evident.

Table 9

MPPs for Two ASVAB Conditions for 10 Job Families with the Largest Proportion of Blacks (17 Job Families)

Job Family	Designation	% Black	9-Test	7-Test	Difference (9-7 Test)
CL1	001	48.0	.301	.283	.018
CL2	002	44.3	.162	.162	.000
FA	008	39.7	.369	.374	-.005
EL2	006	34.7	.415	.397	.018
EL1	005	34.2	.294	.295	-.001
OF	013	33.5	.217	.196	.021
ST1	015	28.0	.130	-.161	-.031
GM2	010	27.9	.096	-.097	-.001
SC	014	24.6	.101	-.105	-.005
MM1	011	21.6	.592	-.596	-.004

Results for Part B

As noted earlier, Part B provides the results of the 66 job family system. Also noted earlier, research on the 66 job family set was originally carried out to demonstrate the value of employing a two-tiered system that could be applied to the largest number of job families obtainable.

In conducting the optimization simulations for the 66 job family system, we imposed an operational constraint, in addition to quotas, that the number of blacks assigned to infantry families, as a percentage of blacks in our sample, would not exceed the total percentage of blacks in the Army. This constraint, as all constraints on optimization do, lowers the objective function, MPP.

Table 10 (starting on page 48) shows the 66 first-tier job families used in Part B of the present study along with the sample sizes for each family. Table 11 (starting on page 50) lists the jobs (MOS) in each second-tier job family. The Appendices in Volume 2 provide additional details of the Part B analysis such as sample sizes by total, gender and race for each family and MPPs and SDs for each condition.

Table 12 shows MPP results for the four ASVAB conditions by total, gender and race for the 66 jobs.

Table 12

Grand MPPs and SDs for Four ASVAB Conditions by Total, Gender and Race (66 MOS)

		Number of Tests			
Group		9-Test	8-Test (-NO)	8-Test (-CS)	7-Test (-NO and -CS)
Total	MPP	.173	.174	.163	.159
	SD	.017	.016	.017	.017
Female	MPP	.013	.015	.005	-.005
	SD	.082	.080	.080	.082
Black	MPP	-.227	-.228	-.240	-.244
	SD	.032	.028	.031	.028

First we examine the differences in MPP as the battery is reduced from 9 to 8 and to a 7-test battery in each of the three groups. The 7-test battery has a .014 loss in MPP for the total; the loss is .018 for females and .017 for blacks. The critical ratios are statistically significant at the .01 level.

Second, we note the variations in SDs across the three groups. We find that the SDs across the four conditions for the total sample are quite small, about .02. In contrast, the SDs are about five times larger for females than for the total while SDs for blacks are only slightly larger than for the total sample. The female group contains 46 pecent black females, but only 17 percent of the black sample is female.

Third, we find that the MPP differences between the 9-test and 7-test batteries in the 66 job family structure is quite comparable to the difference in the 150 job family structure, .012 vs .014, respectively.

Table 13 shows the MPPs for the 9-test battery by gender, race and for the total for each of the 25 job families. Tables 14 through 16 show the same type of data for the 8-test battery without NO, for the 8-test battery without CS, and for the 7-test battery without NO and CS. The tables also show the percentages of females and blacks in each job family. The data in these tables allow us to further examine the effect of reducing battery sizes by groups across different job families. (Text continues on page 29.)

Table 13

MPPs for the 9-Test Battery by Gender, Race and Total (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
12C	0.00	17.84	0.000000	-0.342468	0.060281
			0.000000	0.144768	0.039114
13R	6.36	42.21	-0.352935	-0.460709	-0.307133
			0.282372	0.228932	0.176015
29V	43.48	19.50	0.918086	0.288290	1.089737
			0.499806	0.427225	0.166169
33T	17.55	24.93	-0.249257	-0.226420	0.689244
			0.316811	0.304909	0.468491
63T	0.00	9.23	0.000000	0.086577	0.431356
			0.000000	0.343058	0.094497
67V	4.21	32.37	-0.213807	-0.198262	0.129199
			0.245660	0.223703	0.087542
72E	22.01	57.11	-0.253897	-0.440546	-0.294705
			0.243595	0.101786	0.046002
76C	23.91	56.34	0.219348	0.113034	0.301317
			0.264418	0.125510	0.114741
88H	25.55	71.47	-0.213491	-0.236310	-0.182454
			0.183807	0.118297	0.106288

Table 13 continued

MPPs for the 9-Test Battery by Gender, Race and Total (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
95B	19.19	23.33	0.165855	0.013511	0.351222
			0.263929	0.224279	0.090011
11	1.75	39.10	-0.077212	-0.286229	-0.092959
			0.206320	0.135446	0.065722
12	0.46	47.13	-0.083092	-0.302579	-0.036960
			0.182490	0.082337	0.015580
13	0.42	6.10	0.020257	0.304013	0.814982
			0.090591	0.381095	0.097845
14	40.02	43.84	-0.000902	-0.127654	0.039990
			0.322026	0.268822	0.233519
15	43.40	72.22	-0.049569	-0.154274	-0.081790
			0.170743	0.117288	0.073153
16	2.00	20.19	0.009509	-0.034474	0.374832
			0.105239	0.295545	0.193453
17	34.03	35.60	0.572156	0.377051	0.742529
			0.335453	0.392336	0.245527
18	7.84	32.57	-0.133873	-0.210935	0.093180
			0.185385	0.152246	0.093175
19	2.58	11.26	-0.002157	-0.044294	0.511505
			0.194695	0.252069	0.117259

Table 13 continued

MPPs for the 9-Test Battery by Gender, Race and Total (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
20	0.07	17.11	-0.123115	-0.448565	-0.157303
			0.271010	0.096097	0.023815
21	12.32	6.90	0.488589	0.326255	1.213570
			0.577915	0.512655	0.183779
22	1.00	4.12	0.061901	0.180998	1.185953
			0.197805	0.359121	0.110742
23	9.83	33.93	-0.238189	-0.336511	-0.036753
			0.227391	0.131397	0.060078
24	20.49	50.63	-0.159429	-0.270747	-0.013429
			0.317199	0.160057	0.100894
25	53.90	52.67	0.321647	0.180224	0.314353
			0.200464	0.191212	0.148837

Table 14

MPPs for the 8-Test Battery by Gender, Race and Total, Without NO (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
12C	0.00	17.87	0.000000	-0.308331	0.072729
			0.000000	0.138025	0.044360
13R	2.42	42.92	-0.132325	-0.316499	-0.140120
			0.249538	0.244386	0.163064
29V	44.98	16.36	0.989885	0.388243	1.196017
			0.507286	0.517080	0.248317
33T	18.02	24.09	-0.206220	-0.259310	0.710177
			0.273589	0.305712	0.431183
63T	0.25	9.13	-0.004245	0.020478	0.425716
			0.017558	0.320852	0.090032
67V	2.84	33.48	-0.102955	-0.173917	0.145732
			0.254798	0.226970	0.097241
72E	23.94	57.92	-0.373890	-0.462279	-0.292500
			0.207661	0.113155	0.036554
76C	25.52	58.39	0.161998	0.123675	0.285537
			0.259406	0.152173	0.128100
88H	24.45	68.76	-0.120135	-0.165366	-0.111081
			0.164098	0.106306	0.088942
95B	19.69	22.38	0.103592	0.009392	0.343252
			0.227336	0.236535	0.104872

Table 14 continued

MPPs for the 8-Test Battery by Gender, Race and Total, Without NO (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
11	2.37	42.80	-0.101673	-0.327086	-0.100672
			0.256949	0.110584	0.048501
12	0.38	47.30	-0.039442	-0.302671	-0.037822
			0.132273	0.078966	0.017054
13	0.49	6.06	0.038880	0.219846	0.831696
			0.138842	0.372989	0.094256
14	37.81	44.79	-0.008168	-0.142823	0.029861
			0.285000	0.274767	0.239240
15	43.89	72.15	-0.050111	-0.160868	-0.085878
			0.174384	0.117023	0.064492
16	3.46	22.21	-0.009082	-0.057873	0.335074
			0.124226	0.244672	0.187575
17	34.49	41.27	0.540196	0.342137	0.679371
			0.322418	0.376954	0.253149
18	7.96	32.27	-0.142714	-0.217364	0.069823
			0.201362	0.172322	0.097069
19	2.10	10.15	-0.013630	-0.056306	0.498585
			0.245709	0.244655	0.126532

Table 14 continued

MPPs for the 8-Test Battery by Gender, Race and Total, Without NO (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
20	0.06	17.07	-0.139563	-0.430117	-0.151276
			0.261857	0.099148	0.022871
21	11.61	5.96	0.505201	0.305289	1.236601
			0.594527	0.514398	0.168975
22	1.06	3.85	0.051100	0.173994	1.182909
			0.203364	0.356556	0.106151
23	9.91	33.65	-0.259527	-0.360486	-0.037578
			0.207122	0.137020	0.050015
24	19.26	50.05	-0.153754	-0.247711	-0.004372
			0.309520	0.160359	0.095316
25	55.44	51.47	0.270122	0.151475	0.295284
			0.189142	0.203191	0.136785

Table 15

MPPs for the 8-Test Battery by Gender, Race and Total, Without CS (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
12C	0.00	17.87	0.000000	-0.401096	0.044625
			0.000000	0.120872	0.046911
13R	6.16	41.51	-0.290185	-0.489277	-0.384470
			0.273050	0.205887	0.144105
29V	49.30	19.38	0.975259	0.357460	1.052591
			0.425075	0.545508	0.173302
33T	11.14	24.15	-0.122359	-0.222389	0.600128
			0.318812	0.313411	0.410498
63T	0.25	9.70	0.015180	0.038421	0.412801
			0.067887	0.291471	0.098600
67V	4.54	34.05	-0.243615	-0.207138	0.116355
			0.319569	0.197932	0.067796
72E	20.43	58.88	-0.234325	-0.410872	-0.267440
			0.243200	0.089838	0.043040
76C	25.40	52.59	0.203990	0.123336	0.299979
			0.263636	0.154655	0.126807
88H	26.23	71.56	-0.066425	-0.152689	-0.089656
			0.167674	0.088856	0.080293
95B	18.54	26.20	0.145773	0.013049	0.308948
			0.320647	0.214986	0.091057

Table 15 continued

MPPs for the 8-Test Battery by Gender, Race and Total, Without CS (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
11	1.71	36.53	-0.075201	-0.295978	-0.092202
			0.201595	0.132335	0.050594
12	0.48	46.88	-0.082202	-0.282677	-0.033156
			0.205912	0.080026	0.014430
13	0.31	4.74	0.008541	0.227201	0.824417
			0.038197	0.369233	0.092215
14	34.79	46.31	-0.049127	-0.208702	-0.041346
			0.321397	0.318102	0.266585
15	45.38	73.77	-0.057784	-0.166922	-0.093583
			0.165070	0.113071	0.076270
16	4.26	19.41	-0.017961	-0.022790	0.361124
			0.202993	0.276265	0.177936
17	35.42	44.97	0.543108	0.339786	0.631051
			0.321656	0.315695	0.272125
18	10.04	30.68	-0.147111	-0.238352	0.063196
			0.220892	0.144167	0.093560
19	2.84	11.26	-0.028558	-0.073885	0.483221
			0.203092	0.264992	0.119974

Table 15 continued

MPPs for the 8-Test Battery by Gender, Race and Total, Without CS (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
20	0.07	17.08	-0.117362	-0.432152	-0.140579
			0.289818	0.096698	0.021966
21	11.25	6.94	0.465679	0.284788	1.206194
			0.585093	0.496308	0.172805
22	1.48	3.71	0.073487	0.156645	1.209179
			0.239357	0.353857	0.107814
23	9.19	33.41	-0.254932	-0.336628	-0.040694
			0.179309	0.117737	0.068423
24	21.07	49.83	-0.168003	-0.312384	-0.061446
			0.287354	0.167472	0.084914
25	48.78	54.02	0.266826	0.093487	0.233651
			0.184039	0.204060	0.138022

Table 16

MPPs for the 7-Test Battery by Gender, Race and Total, Without NO and CS (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
12C	0.00	17.91	0.000000	-0.379182	0.036618
			0.000000	0.136968	0.048215
13R	4.05	39.52	-0.186910	-0.428052	-0.262564
			0.278102	0.152506	0.114501
29V	42.41	25.79	0.870032	0.279438	0.952301
			0.529275	0.438914	0.245606
33T	5.31	26.43	-0.136219	-0.252223	0.415156
			0.262846	0.292081	0.424395
63T	0.25	10.52	0.015180	0.047712	0.419110
			0.067887	0.302040	0.094670
67V	3.27	32.26	-0.164104	-0.160153	0.181116
			0.240598	0.225085	0.074258
72E	24.90	57.59	-0.274170	-0.400669	-0.203195
			0.201132	0.116321	0.037150
76C	29.22	47.41	0.259404	0.095435	0.300134
			0.287118	0.150854	0.137155
88H	22.22	71.23	-0.078039	-0.160252	-0.108711
			0.171475	0.099300	0.079995
95B	17.36	27.88	0.012411	-0.045406	0.268147
			0.284390	0.207227	0.085210

Table 16 continued

MPPs for the 7-Test Battery by Gender, Race and Total, Without NO and CS (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
11	3.13	38.95	-0.154758	-0.318784	-0.098206
			0.273297	0.128375	0.034312
12	0.37	46.11	-0.072523	-0.283745	-0.028641
			0.203851	0.083010	0.014881
13	0.31	4.58	0.008541	0.233138	0.852145
			0.038197	0.378242	0.098166
14	37.88	48.08	-0.064382	-0.217826	-0.062520
			0.291577	0.278905	0.237247
15	43.27	75.04	-0.060105	-0.178763	-0.101112
			0.169277	0.120307	0.074009
16	4.13	22.57	-0.032314	-0.050521	0.322165
			0.129939	0.243995	0.183723
17	34.00	49.05	0.537818	0.312508	0.581381
			0.356054	0.346900	0.279634
18	12.26	29.01	-0.178773	-0.290654	0.029278
			0.199802	0.191425	0.082922
19	2.29	9.33	0.006360	-0.080281	0.482922
			0.213784	0.260685	0.123382

Table 16 continued

MPPs for the 7-Test Battery by Gender, Race and Total, Without NO and CS (25 Job Families)

Family Designation	Percent		MPP / SD		
	Female	Black	Female	Black	Total
20	0.11	17.02	-0.210493	-0.422607	-0.139886
			0.272636	0.095109	0.023505
21	10.42	8.18	0.532127	0.304293	1.203588
			0.577539	0.533063	0.166475
22	1.51	3.38	0.081796	0.137099	1.203743
			0.223009	0.339920	0.092910
23	9.38	32.47	-0.238018	-0.357770	-0.046791
			0.244399	0.121592	0.058070
24	20.92	49.70	-0.185209	-0.297534	-0.045697
			0.282710	0.172414	0.087452
25	48.60	60.30	0.238263	0.052210	0.192286
			0.244223	0.164482	0.141860

In Table 17, we show MPPs for two ASVAB conditions for the five job families with the largest concentration of females. The percentages of females in these families range from 53.9 percent to 34.0 percent, compared to about 12 percent females in the total sample.

Table 17

MPPs for Two ASVAB Conditions for the Five Job Families with the Largest Proportion of Females (25 Job Families)

Job Family Designation	% Female	MPP 9-Test	MPP 7-Test	Difference (9 - 7 Tests)
25	53.9	.322	.238	.084
29V	43.5	.918	.870	.038
15	43.4	-.050	-.060	.010
14	40.4	-.000	-.064	.064
17	34.0	.572	.538	.034
Average MPP Difference for 5 Job Families				.046
Average MPP Difference for 66 MOS				.018

We find an average MPP loss of .046 for females across the five jobs with the largest concentration of females as the battery is reduced from 9 tests to 7 tests. This compares to a .018 loss for females across all 66 jobs. The job families with very high concentrations of females tend to be traditionally female jobs. Three of the five job families consist of administrative and financial jobs (job family designation 25), personnel records and unit supply jobs (job family designation 15), and legal and personnel administrative jobs (job family 17). The remaining two job families are operator jobs (job family designation 14) or first echelon repair jobs (job family designation 29V and job family designation 17). These data indicate that the impact of dropping both NO and CS from the battery is quite large for females for jobs that are traditionally associated as being "female jobs."

Table 18 makes the same type of comparisons as above for blacks. The pattern is not as clear for blacks as for females, but it appears that the loss in MPP for some jobs might be great, i.e., the loss is .128 for administrative and finance specialists (job family designation 25).

Table 18

MPPs for Two ASVAB Conditions for the Five Job Families with the Largest Proportion of Blacks (25 Job Families)

Job Family Designation	% Black	MPP 9-Test	MPP 7-Test	Difference (9 - 7 Tests)
15	72.2	-.154	-.179	.025
88H	71.5	-.236	-.160	-.076
72E	57.1	-.441	-.400	-.041
76C	56.3	.113	.095	.018
25	52.7	.180	.052	.128
Average MPP Difference for 5 Job Families				.011
Average MPP Difference for 66 MOS				.017

Summary and Conclusions

A. Summary

One major goal of this research was to determine the change in mean predicted performance (MPP) of ASVAB if either the Numerical Operations (NO) or Coding Speed (CS) test or both were to be dropped from the battery. Conversely, we wished to determine the contribution that the NO and CS tests make to the classification efficiency of ASVAB. A second major goal was to determine the effect on gender and racial fairness of ASVAB test composites by a reduction in the number of tests. Fairness is traditionally defined as the absence of underprediction for the minority group for which discrimination potentially exists (Cleary, 1968). Thus, if a test is used for selection and is underpredicting minority groups, members of a minority group may be rejected when they were capable of adequate performance. If a test is used for classification and is underpredicting minority group performance, members of a minority group would likely be assigned to a different sets of jobs at lower predicted performance than they otherwise would have been. A third goal was to provide conversion tables to use in transforming operational ASVAB test scores to operational composite scores (both tier 1 and tier 2 test composites) in the event of a change in the composition of tests in ASVAB.

For the first-tiered system, the 150 job families, a significant loss of MPP would be incurred by reducing the 9-test battery to a 7-test battery. Without the use of NO and CS, the MPP for the total sample would drop from .195 to .183, a reduction in classification efficiency of 6.2 percent for the first tier. Without the use of NO and CS, there is an indication that the 50 MOS with the largest concentration of females would have a greater loss of MPP in the first tier than the remaining 100 MOS. The loss in MPP for the top 50 jobs (by concentration of females) would be .026 compared to a loss of .008 for the remaining 100 jobs. The pattern of greater loss of MPP for blacks in the first tier is not as clear. The loss in MPP in the second tier for the top 10 of 17 job families with the largest concentration of females shows a clear pattern of greater losses than the remaining families. The pattern is, again, not as clear for blacks.

For the 66 job families in the demonstration study, there is a significant loss of MPP for both the total sample and separately for females and for blacks by reducing the 9-test battery to a 7-test battery. Without the use of NO and CS, MPP is reduced from .173 to .159 for the total, an 8.1 percent loss; for females, from .013 to -.005; and for blacks, from -.227 to -.244. The MPPs for the top 5 out of 25 job families with the largest proportion of females shows a reduction of .046 compared to .018 for all 25 job families. The MPPs for the top 5 out of 25 job families with the largest proportion of blacks show an MPP of .011 compared to .017 for all 25 families, a reduction of .006 in MPP.

B. Conclusions

Dropping NO and CS would significantly reduce the classification efficiency of both the first-tiered and second-tiered operational system. The loss from dropping NO is slight compared to CS, but the combined effect of dropping both is greater than dropping CS alone.

The loss in mean predicted performance for females is consistent with increased underprediction of performance. Dropping NO and CS has a greater impact on females than on the total sample, since females score relatively higher on NO and CS tests. Dropping these tests and recalculating the composites reduces composite predicted values (of performance) for females relative to males. This results in a tendency toward underprediction, making the composites less fair to females. Dropping the tests would not only increase gender unfairness, but would also significantly reduce the accuracy of predicted performance for females. The impact of dropping NO and CS on blacks is comparable to the impact on the total group. There are, however, a number of jobs in which the loss of MPP for blacks is large.

Based on these findings, the authors recommend retaining the current 9-test battery and continuing to explore the addition of new tests that would increase the classification efficiency of the ASVAB.

A set of conversion tables has been computed for Army use, in the event that the size of the battery is altered by dropping NO or CS or both. This would allow for the continued use of the recommended two-tiered system.

Postscript

The Office of the Secretary of Defense is implementing plans to delete the NO and CS subtests from the ASVAB. A December 2001 target date has been established.

Table 1

The 150 Job Family First-Tier System

Family	N	MOS	Title
1	5000	11B	Infantryman
2	5000	11C	Indirect Fire Infantryman
3	5000	11H	Heavy Anti-Armor Weapons Infantryman
4	4593	11M	Fighting Vehicle Infantryman
5	5000	12B	Combat Engineer
6	1950	12C	Bridge Crewmember
7	603	12F	Engineering Tracked Vehicle Crewman
8	5000	13B	Cannon Crewmember
9	720	13C	Tacfire Operations Specialist
10	1919	13E	Cannon Fire Direction Specialist
11	4101	13F	Fire Support Specialist
12	776	13M	Multiple Launch Rocket Sys (MLRS) Crewmember
13	2724	13N	Lance Crewmember
14	592	13R	Fa Firefinder Radar Operator
15	683	14D	Hawk Missile Crewmember
16	703	16E	Hawk Fire Control Crewmember
17	1104	16P	Chaparral Crewmember
18	1996	16R	Vulcan Crewmember
19	2406	16S	Man Portable Air Defense System Crewmember
20	5000	19D	Cavalry Scout
21	4764	19E	M48-M60 Armor Crewman
22	5000	19K	M1 Abrams Armor Crewman
23	752	**24Z** 24C 24G 24N 21L	**Combined** Hawk Firing Section Mechanic Hawk Information Coordination Center Mechanic Chaparral System Mechanic Pershing Electronics Repairer
24	358	25S	Still Documentation Specialist
25	898	27E	TOW/Dragon Repairer
26	852	29V	Strategic Microwave Systems Repairer
27	5000	31C	Single Channel Radio Operator
28	5000	31K	Combat Signaler

Table 1 continued

The 150 Job Family First-Tier System			
Family	N	MOS	Title
29	2778	31L	Wire Systems Installer
30	709	31N	Communications Systems/Circuit Controller
31	563	31P	Microwave Systems Operator-Maintainer
32	1394	31Q	Tactical Satellite/Microwave System Operator
33	5000	31R	Multichannel Transmission Systems Operator
34	498	31S	Satellite Communications System Operator
35	4278	31V	Unit Level Communications Maintainer
36	1021	35E	Radio and Communications Security Repairer
37	307	35H	TMDE Maintenance Support Specialist
38	1034	35J	Telecommunications Terminal Device Repairs
39	737	35N	Wire Systems Equipment Repairer
40	1201	36M	Switching Systems Operator
41	323	41C	Fire Control Instrument Repairer
42	1045	44B	Metal Worker
43	592	44E	Machinist
44	612	45B	Small Arms Repairer
45	565	45D	Self-Propelled FA Turret Mechanic
46	546	45E	M1 Abrams Tank Turret Mechanic
47	817	45K	Tank Turret Repairer
48	448	45L	Artillery Repairer
49	563	45N	M60A1/A3 Tank Turret Mechanic
50	509	45T	Bradley Fighting Vehicle Sys Turret Mech
51	498	**46Z** 46Q 46R	**Combined** Journalist Broadcast Journalist
52	2037	51B	Carpentry and Masonry Specialist
53	532	51K	Plumber
54	327	51M	Firefighter
55	723	51R	Interior Electrician
56	344	51T	Technical Engineering Specialist
57	529	52C	Utility Equipment Repairer

Table 1 continued

The 150 Job Family First-Tier System			
Family	N	MOS	Title
58	5000	52D	Power Generator Equipment Repairer
59	1380	54B	Chemical Operations Specialist
60	2457	55B	Ammunitions Specialist
61	415	55D	Explosive Ordinance Disposal (EOD) Spec
62	791	57E	Laundry and Bath Specialist
63	3054	62B	Construction Equipment Repairer
64	1522	62E	Heavy Construction Equipment Operator
65	527	62F	Crane Operator
66	887	62J	General Construction Equipment Operator
67	5000	63B	Light-Wheel Vehicle Mechanic
68	1234	63D	Self-Propelled Field Artillery Sys Mech
69	1376	63E	M1 Abrams Tank System Mechanic
70	785	63G	Fuel and Electrical System Repairer
71	2396	63H	Track Vehicle Repairer
72	1302	63J	Quartermaster and Chemical Equip Repairer
73	750	63N	M60A1/A3 Tank System Mechanic
74	2506	63S	Heavy-Wheel Vehicle Mechanic
75	3378	63T	Bradley Fighting Vehicle Sys Mechanic
76	3062	63W	Wheel Vehicle Repairer
77	987	63Y	Track Vehicle Mechanic
78	1359	67N	Utility Helicopter Repairer
79	236	67R	AH-64 Attack Helicopter Repairer
80	1564	67T	Tactical Transport Helicopter Repairer
81	1632	67U	Medium Helicopter Repairer
82	1751	67V	Observation/Scout Helicopter Repairer
83	1168	67Y	AH-1 Attack Helicopter Repairer
84	640	68B	Aircraft Powerplant Repairer
85	740	68D	Aircraft Powertrain Repairer
86	712	68F	Aircraft Electrician
87	904	68G	Aircraft Structural Repairer
88	1128	68J	Aircraft Armament/Missile Systems Repairer

Table 1 continued

The 150 Job Family First-Tier System

Family	N	MOS	Title
89	388	68M	Aircraft Weapon Systems Repairer
90	900	68N	Avionic Mechanic
91	324	**68Z**	**Combined**
		68L	Avionic Communications Equipment Repairer
		68Q	Avionic Nav & Flight Control Equipment Repairer
		68R	Avionic Special Equipment Repairer
92	1431	71D	Legal Specialist
93	1145	71G	Patient Administration Specialist
94	5000	71L	Administrative Specialist
95	972	71M	Chaplain Assistant
96	1651	72E	Tactical Telecommunications Center Op
97	1738	72G	Automatic Data Telecommunications Center Op
98	2246	73C	Finance Specialist
99	500	73D	Accounting Specialist
100	1184	74B	Information Systems Operator
101	4113	75B	Personnel Administration Specialist
102	2505	75C	Personnel Management Specialist
103	2714	75D	Personnel Records Specialist
104	1379	75E	Personnel Actions Specialist
105	624	75F	Personnel Information Sys Mgt Specialist
106	997	76J	Medical Supply Specialist
107	2897	76P	Material Control and Accounting Specialist
108	5000	76V	Material Storage and Handling Specialist
109	541	76X	Subsistence Supply Specialist
110	5000	77F	Petroleum Supply Specialist
111	805	77W	Water Treatment Specialist
112	331	81L	Printing and Bindery Specialist
113	808	82C	Field Artillery Surveyor
114	1525	88H	Cargo Specialist
115	5000	88M	Motor Transport Operator
116	1954	88N	Traffic Management Coordinator
117	5000	91A	Medical Specialist

Table 1 continued

The 150 Job Family First-Tier System			
Family	N	MOS	Title
118	748	91D	Operating Room Specialist
119	1209	91E	Dental Specialist
120	474	91F	Psychiatric Specialist
121	309	91G	Behavioral Science Specialist
122	1478	91K	Medical Laboratory Specialist
123	513	91M	Hospital Food Service Specialist
124	695	91P	X-Ray Specialist
125	682	91Q	Pharmacy Specialist
126	558	91R	Veterinary Food Inspection Specialist
127	514	91S	Preventive Medicine Specialist
128	345	91T	Animal Care Specialist
129	641	**91Z** 91H 91J 91U 91Y	**Combined** Orthopedic Specialist Physical Therapy Specialist Ear, Nose and Throat Specialist Eye Specialist
130	5000	92A	Automated Logistical Specialist
131	5000	92G	Food Service Specialist
132	298	92M	Mortuary Affairs Specialist
133	1009	92R	Parachute Rigger
134	5000	92Y	Unit Supply Specialist
135	626	93C	Air Traffic Control (ATC) Operator
136	1327	93P	Flight Operations Coordinator
137	5000	95B	Military Police
138	323	95C	Corrections Specialist
139	818	96B	Intelligence Analyst
140	361	96D	Imagery Analyst
141	792	96R	Ground Surveillance Systems Operator
142	429	97B	Counterintelligence Agent
143	562	98C	Signals Intelligence Analyst
144	1242	98G	EW Signal Intelligence Voice Interrogator
145	966	98H	Morse Interceptor

Table 1 continued

The 150 Job Family First-Tier System			
Family	N	MOS	Title
146	463	**98Z**	**Combined** (98D, 98J, 98K)
		98D	Emitter Locator/Identifier
		98J	Noncommunications Interceptor/Analyst
		98K	Non-Morse Interceptor/Analyst
147			
	215	55G	Nuclear Weapons Specialist
	303	93F	Field Artillery Meteorological Crewmember
148			
	548	**27Z**	**Combined**
		24K	Hawk Continuous Wave Radar Repairer
		24M	Vulcan System Mechanic
		27H	Hawk Firing Section Repairer
		27M	Multiple Launch Rocket System Repairer
		27N	Forward Area Alerting Radar (FAAR) Repairer
	433	**29Z**	**Combined**
		29F	Fixed Communications Security Equipment Repairer
		29M	Tactical Satellite Microwave Repairer
149			
	451	25M	Graphics Documentation Specialist
	372	**25Z**	**Combined**
		25C	Cartographer
		25P	Visual Information/Audio Documentation Specialist
	372	97E	Interrogator
150			
	224	15E	Pershing Missile Crewmember
	171	16J	Defense Acquisition Radar Operator

Table 2

The 17 Family Second-Tier System

Cluster	MOS	Job Title
		Clerical Administration (CL) 1
1	71D	Legal Specialist
	71G	Patient Administration Specialist
	71L	Administrative Specialist
	71M	Chaplain Assistant
	73C	Finance Specialist
	73D	Accounting Specialist
	75B	Personnel Administration Specialist
	75C	Personnel Management Specialist
	75D	Personnel Records Specialist
	75E	Personnel Actions Specialist
	75F	Personnel Information Sys Mgt Specialist
	75H	Personnel Services Specialist
	76P	Material Control and Accounting Specialist
	88N	Traffic Management Coordinator
		Clerical Administration (CL) 2
2	76J	Medical Supply Specialist
	76V	Material Storage and Handling Specialist
	76X	Subsistence Supply Specialist
	77F	Petroleum Supply Specialist
	92A	Automated Logistical Specialist
	92Y	Unit Supply Specialist
		Combat (CO) 1
3	11B	Infantryman
	11C	Indirect Fire Infantryman
	11H	Heavy Anti-Armor Weapons Infantryman
	11M	Fighting Vehicle Infantryman
	18B	Special Forces Weapons Sergeant
	18X	Special Forces Candidate
		Combat (CO) 2

Table 2 continued

The 17 Family Second-Tier System		
Cluster	MOS	Job Title
4	12B	Combat Engineer
	12C	Bridge Crewmember
	12F	Engineering Tracked Vehicle Crewman
	18C	Special Forces Engineer Sergeant
	19D	Cavalry Scout
	19E	M48-M60 Armor Crewman
	19K	M1 Abrams Armor Crewman
		Electronics (EL) 1
5	14E	Patriot Fire Control Enhanced Operator/Maintainer
	14L	AN/TSQ-73 Air Defense Command and Control Operator/Maintainer
	14M	Man Portable Air Defense System Crewmember (RC)
	18E	Special Forces Communications Sergeant (Special Operators Communications Spec)
	24Z	**Combined**
	24C	Hawk Firing Section Mechanic
	24G	Hawk Information Coordination Ctr Mech
	24N	Chaparral System Mechanic
	21L	Pershing Electronics Repairer
	25L	AN/TSQ-73 ADA Cmnd/Control System Operator/Repairer
	31L	Wire Systems Installer
	31R	Multichannel Transmission Systems Operator
	31V	Unit Level Communications Maintainer
	51R	Interior Electrician
	52G	Transmission and Distribution Specialist
	68M	Aircraft Weapon Systems Repairer
	68X	AH-64 Armament/Electrical Systems Repairer
		Electronics (EL) 2
6	25V	Combat Documentation/Production Specialist
	31K	Combat Signaler
	31N	Communications Systems/Circuit Controller
	31P	Microwave Systems Operator-Maintainer

Table 2 continued

The 17 Family Second-Tier System		
Cluster	MOS	Job Title
	31Q	Tactical Satellite/Microwave System Op
	31S	Satellite Communications System Operator
	31U	Signal Support Systems Specialist
	35Y	Integrated Family of Test Equipment (IFTE) Operator/Maintainer
	36M	Switching Systems Operator
	39Y	FA Tactical Fire Direction Systems Specialist
	55G	Nuclear Weapons Specialist
	74G	Telecommunications Computer Operator/Maintainer
	93F	Field Artillery Meteorological Crewmember
	96H	Air Intelligence Specialist
	96R	Ground Surveillance Systems Operator
		Electronics (EL) 3
7	25R	Visual Information Equipment Operator/Maintainer (Audio/Visual Equip Repairer)
	27E	TOW/Dragon Repairer
	27F	Vulcan Repairer
	27G	Chaparral/Redeye Repairer
	27K	Hawk Fire Control/Continuous Wave Radar Repairer
	27T	Avenger System Repairer
	27X	Patriot System Repairer
	27Z	**Combined**
	24K	Hawk Continuous Wave Radar Repairer
	24M	Vulcan System Mechanic
	27H	Hawk Firing Section Repairer
	27M	Multiple Launch Rocket System Repairer
	27N	Forward Area Alerting Radar (FAAR) Repairer
	29H	Automatic Digital Message Switch Equipment Repairer
	29V	Strategic Microwave Systems Repairer
	29Z	**Combined**
	29F	Fixed Communications Security Equip Repairer
	29M	Tactical Satellite Microwave Repairer
	31F	Network Switching Sys Op/Maintainer (Mobile Subscriber Equip Network Sys Op)
	33R	Electronic Warfare/Intercept Aviation Systems Repairer

Table 2 continued

The 17 Family Second-Tier System		
Cluster	MOS	Job Title
	35B	Land Combat Supply Systems Test Specialist
	35D	Air Traffic Control Equipment Repairer
	35E	Radio and Communications Security Repairer
	35H	TMDE Maintenance Support Specialist
	35J	Telecommunications Terminal Device Repairs
	35L	Avionic Communications Equipment Repairer
	35N	Wire Systems Equipment Repairer
	35Q	Avionic Flight Systems Repairer
	39B	Automatic Test Equipment Operator/Maintainer
	45G	Fire Control Repairer
	68J	Aircraft Armament/Missile Systems Repairer
	68N	Avionic Mechanic
	68Z	**Combined**
	68L	Avionic Communications Equipment Repairer
	68Q	Avionic Nav & Flight Control Equip Repairer
	68R	Avionic Special Equipment Repairer
	93D	ATC Systems, Subsystems and Equipment Repairer
		Field Artillery (FA)
8	13B	Cannon Crewmember
	13C	Tacfire Operations Specialist
	13E	Cannon Fire Direction Specialist
	13F	Fire Support Specialist
	13P	MLRS/Lance Operations/Fire Direction Specialist
		General Maintenance (GM) 1
9	41C	Fire Control Instrument Repairer
	44B	Metal Worker
	44E	Machinist
	45B	Small Arms Repairer
	45D	Self-Propelled FA Turret Mechanic
	45K	Tank Turret Repairer
	45L	Artillery Repairer
	45T	Bradley Fighting Vehicle Sys Turret Mech

Table 2 continued

The 17 Family Second-Tier System		
Cluster	MOS	Job Title
	52C	Utility Equipment Repairer
	52D	Power Generator Equipment Repairer
	52F	Turbine Engine Driven Generator Repairer
		General Maintenance (GM) 2
10	43M	Fabric Repair Specialist
	51B	Carpentry and Masonry Specialist
	51K	Plumber
	51M	Firefighter
	55B	Ammunitions Specialist
	55D	Explosive Ordinance Disposal (EOD) Spec
	57E	Laundry and Bath Specialist
	62E	Heavy Construction Equipment Operator
	62F	Crane Operator
	62G	Quarrying Specialist
	62H	Concrete and Asphalt Equipment Operator
	62J	General Construction Equipment Operator
	77W	Water Treatment Specialist
	88H	Cargo Specialist
	92M	Mortuary Affairs Specialist
	92R	Parachute Rigger
		Mechanical Maintenance (MM) 1
11	24T	Patriot Operator and System Mechanic
	45E	M1 Abrams Tank Turret Mechanic
	45N	M60A1/A3 Tank Turret Mechanic
	62B	Construction Equipment Repairer
	63B	Light-Wheel Vehicle Mechanic
	63D	Self-Propelled Field Artillery Sys Mech
	63E	M1 Abrams Tank System Mechanic
	63G	Fuel and Electrical System Repairer
	63H	Track Vehicle Repairer
	63J	Quartermaster and Chemical Equip Repairer

Table 2 continued

The 17 Family Second-Tier System		
Cluster	MOS	Job Title
	63N	M60A1/A3 Tank System Mechanic
	63S	Heavy-Wheel Vehicle Mechanic
	63T	Bradley Fighting Vehicle Sys Mechanic
	63W	Wheel Vehicle Repairer
	63Y	Track Vehicle Mechanic
	88K	Watercraft Operator
	88L	Watercraft Engineer
	88P	Railway Equipment Repairer (RC)
	88Q	Railway Car Repairer
	88R	Airbrake Repairer
	88S	Locomotive Electrician
	88T	Railway Section Repairer (RC)
	88U	Railway Operators Crewmember
	88V	Train Crewmember
		Mechanical Maintenance (MM) 2
12	67G	Utility Airplane Repairer
	67H	Observation Airplane Repairer
	67N	Utility Helicopter Repairer
	67S	Helicopter Repairer
	67T	Tactical Transport Helicopter Repairer
	67U	Medium Helicopter Repairer
	67V	Observation/Scout Helicopter Repairer
	67X	Heavy Lift Helicopter Repairer
	67Y	AH-1 Attack Helicopter Repairer
	68B	Aircraft Powerplant Repairer
	68D	Aircraft Powertrain Repairer
	68F	Aircraft Electrician
	68G	Aircraft Structural Repairer
		Operators & Food (OF)
13	13M	Multiple Launch Rocket Sys (MLRS) Crewmember
	13N	Lance Crewmember

Table 2 continued

The 17 Family Second-Tier System		
Cluster	MOS	Job Title
	14D	Hawk Missile Crewmember
	14J	Early Warning Systems Operator **(F)**
	14R	Sight Forward Heavy Crewmember **(F)**
	14S	Avenger Crewmember
	15E	Pershing Missile Crewmember
	16D	Hawk Missile Crewmember
	16E	Hawk Fire Control Crewmember
	16H	Air Defense Artillery Operator/Intelligence Assistant
	16J	Defense Acquisition Radar Operator
	16P	Chaparral Crewmember
	16R	Vulcan Crewmember
	16S	Man Portable Air Defense System Crewmember
	16T	Patriot Missile Crewmember
	16X	Feeds 16B, 16D, 16E and 16T (CMF 16 Trainee)
	88M	Motor Transport Operator
	91M	Hospital Food Service Specialist
	92G	Food Service Specialist
		Surveillance & Communication (SC)
14	13R	Fa Firefinder Radar Operator
	13T	Remotely Piloted Vehicle Crewmember
	31C	Single Channel Radio Operator
	72E	Tactical Telecommunications Center Op
	72G	Automatic Data Telecommunications Center Op
	74C	Telecommunications Operator/Maintainer
		Skilled Technical (ST) 1
15	18D	Special Forces Medical Sergeant
	42C	Orthotic Specialist
	42E	Optical Laboratory Specialist
	77L	Petroleum Laboratory Specialist
	91A	Medical Specialist
	91B*	Medical NCO (called Medical Equipment Repairer, 91A, on CMF listing)

Table 2 continued

The 17 Family Second-Tier System		
Cluster	MOS	Job Title
	91D	Operating Room Specialist
	91E	Dental Specialist
	91F	Psychiatric Specialist
	91G	Behavioral Science Specialist
	91K	Medical Laboratory Specialist
	91N	Cardiac Specialist
	91P	X-Ray Specialist
	91Q	Pharmacy Specialist
	91R	Veterinary Food Inspection Specialist
	91S	Preventive Medicine Specialist
	91T	Animal Care Specialist
	91V	Respiratory Specialist
	91X	Mental Health Specialist

Table 2 continued

The 17 Family Second-Tier System		
Cluster	MOS	Job Title
	91Z	**Combined**
	91H	Orthopedic Specialist
	91J	Physical Therapy Specialist
	91U	Ear, Nose and Throat Specialist
	91Y	Eye Specialist
		Skilled Technical (ST) 2
16	25M	Graphics Documentation Specialist
	25S	Still Documentation Specialist
	25Z	**Combined**
	25C	Cartographer
	25P	Visual Info/Audio Documentation Specialist
	33T	Electronic Warfare/Intercept Tactical Systems Repairer
	33V	Electronic Warfare/Intercept Aerial Sensor
	33Y	Strategic Systems Repairer (EW Tactical Systems Repairer)
	37F	Psychological Operations Specialist
	38A	Civil Affairs Specialist
	46Z	**Combined**
	46Q	Journalist
	46R	Broadcast Journalist
	51T	Technical Engineering Specialist
	55R	Ammunitions Stock Control and Account Specialist
	71C	Executive Administrative Specialist
	74B	Information Systems Operator
	81C	Cartographer
	81L	Printing and Bindery Specialist
	81Q	Terrain Analyst
	81T	Topographic Analyst
	82D	Topographic Surveyor
	93B	Aeroscout Observer
	96B	Intelligence Analyst
	96D	Imagery Analyst

Table 2 continued

The 17 Family Second-Tier System		
Cluster	MOS	Job Title
	96F	Psychological Operations Specialist
	96U	Unmanned Aerial Vehicle Operator
	97B	Counterintelligence Agent
	97E	Interrogator
	97G	Multi-Discipline Counter Intelligence
	97L	Translator/Interpreter (RC)
	97X	Linguist
	98C	Signals Intelligence Analyst
	98G	EW Signal Intelligence Voice Interrogator
	98H	Morse Interceptor
	98Z	**Combined**
	98D	Emitter Locator/Identifier
	98J	Noncommunications Interceptor/Analyst
	98K	Non-Morse Interceptor/Analyst
	98X	EW/SIGNIT Specialist
		Skilled Technical (ST) 3
17	54B	Chemical Operations Specialist
	82C	Field Artillery Surveyor
	93C	Air Traffic Control (ATC) Operator
	93P	Flight Operations Coordinator
	95B	Military Police
	95C	Corrections Specialist

Table 10

The 66 Job Families

Family	N	MOS	Title
1	3490	11B	Infantryman
2	1896	11C	Indirect Fire Infantryman
3	1027	11H	Heavy Anti-Armor Weapons Infantryman
4	1416	11M	Fighting Vehicle Infantryman
5	726	12C	Bridge Crewmember
6	7851	13B	Cannon Crewmember
7	1757	13F	Fire Support Specialist
8	375	13M	Multiple Launch Rocket Sys (MLRS) Crewmember
9	474	13N	Lance Crewmember
10	162	13R	FA Firefinder Radar Operator
11	279	16D	Hawk Missile Crewmember
12	450	16P	Chaparral Crewmember
13	399	16R	Vulcan Crewmember
14	837	16S	Man Portable Air Defense System Crewmember
15	1661	19E	M48 - M60 Armor Crewman
16	2714	19K	M1 Abrams Armor Crewman
17	395	29E	Radio Repairer
18	273	29J	Telecommunications Terminal Device Repairer
19	307	29N	Telephone Central Office Repairer
20	149	29V	Strategic Microwave Systems Repairer
21	2839	31C	Single Channel Radio Operator
22	2750	31K	Combat Signaller
23	1087	31L	Wire Systems Installer
24	1729	31V	Unit Level Communications Maintainer
25	71	33T	EW/I Tactical Systems Repairer
26	197	35K	Avionic Mechanic
27	377	43E	Parachute Rigger
28	417	44B	Metal Worker
29	234	44E	Mechanist
30	328	45K	Tank Turret Repairer
31	859	51B	Carpentry and Masonry Specialist
32	2394	52D	Power Generator Equipment Repairer
33	1078	54B	Chemical Operations Specialist
34	919	55B	Ammunitions Specialist
35	1123	62B	Construction Equipment Repairer
36	683	62E	Heavy Construction Equipment Operator
37	382	62J	General Construction Equipment Operator
38	4439	63B	Light-Wheel Vehicle Mechanic
39	540	63E	M1 Abrams Tank System Mechanic

Table 10 continued

The 66 Job Families			
Family	N	MOS	Title
40	311	63G	Fuel and Electrical system Repairer
41	947	63S	Heavy-Wheel Vehicle Mechanic
42	700	63T	Bradley Fighting Vehicle Systems Mechanic
43	757	67V	Observation/Scout Helicopter Repairer
44	256	68B	Aircraft Powerplant Repairer
45	384	68G	Aircraft Structural Repairer
46	367	68J	Aircraft Armament/Missile Systems Repairer
47	550	71D	Legal Specialist
48	765	71L	Administrative Specialist
49	377	71M	Chaplain Assistant
50	638	72E	Tactical Telecommunications Ctr Op
51	649	72G	Automatic Data Telecommunications Ctr Op
52	799	73C	Finance Specialist
53	327	74D	Computer/Machine Operator
54	1542	75B	Personnel Administration Specialist
55	989	75D	Personnel Records Specialists
56	2403	76C	Equipment Records and Parts Specialist
57	4279	76Y	Unit Supply Specialist
58	2846	77F	Petroleum Supply Specialist
59	129	81E	Graphics Documentation Specialist
60	95	84B	Still Documentation Specialist
61	91	84F	Visual Info/Audio Documentation Specialist
62	533	88H	Cargo Specialist
63	5368	88M	Motor Transport Operator
64	1790	91A	Medical Specialist
65	3787	94B	Food Service Specialist
66	2369	95B	Military Police
Total	83132		

Table 11

Names of the 25 Job Families

Family Number	MOS	Name
1	12C	Bridge Crewmember
2	13R	Fa Firefinder Radar Operator
3	29V	Strategic Microwave Systems Repairer
4	33T	EW/I Tactical Systems Repairer
5	63T	Bradley Fighting Vehicle Sys Mechanic
6	67V	Observation/Scout Helicopter Repairer
7	72E	Tactical Telecommunications Center Op
8	76C	Equipment Records and Parts Specialist
9	88H	Cargo Specialist
10	95B	Military Police
11	31L	Wire Systems Installer
	31V	Unit Level Communications Maintainer
12	13B	Cannon Crewmember
	43E	Parachute Rigger
13	62B	Construction Equipment Repairer
	63B	Light-Wheel Vehicle Mechanic
	63E	M1 Abrams Tank System Mechanic
14	29N	Telephone Central Office Repairer
	71M	Chaplain Assistant
	74D	Computer/Machine Operator
15	13M	Multiple Launch Rocket Sys (MLRS) Crewmember
	35K	Avionic Mechanic
	72G	Automatic Data Telecommunications Center Op
	75D	Personnel Records Specialist
	76Y	Unit Suply Specialist
16	16R	Vulcan Crewmember
	45K	Tank Turret Repairer

Names of the 25 Job Families

Family Number	MOS	Name
17	71D	Legal Specialist
	75B	Personnel Administration Specialist
	81E	Graphics Documentation Specialist
18	13F	Fire Support Specialist
	16S	Man Portable Air Defense System Crewmember
19	16D	Hawk Missile Crewmember
	16P	Chaparral Crewmember
	44B	Metal Worker
	62E	Heavy Construction Equipment Operator
	63G	Fuel and Electrical System Repairer
	63S	Heavy-Wheel Vehicle Mechanic
	77F	Petroleum Supply Specialist
	88M	Motor Transport Operator
20	11B	Infantryman
	11C	Indirect Fire Infantryman
	11H	Heavy Anti-Armor Weapons Infantryman
	11M	Fighting Vehicle Infantryman
	68B	Aircraft Powerplant Repairer
21	29E	Radio Repairer
	29J	Telecommmunications Terminal Device Repairer
	84B	Still Documentation Specialist

Names of the 25 Job Families

Family Number	MOS	Name
22	44E	Machinist
	52D	Power Generator Equipment Repairer
	54B	Chemical Operations Specialist
	68G	Aircraft Structural Repairer
23	19E	M48-M60 Armor Crewman
	19K	M1 Abrams Armor Crewman
	31K	Combat Signaler
	51B	Carpentry and Masonry Specialist
	62J	General Construction Equipment Operator
	91A	Medical Specialist
24	13N	Lance Crewmember
	31C	Single Channel Radio Operator
	55B	Ammunitions Specialist
	68J	Aircraft Armament/Missile Systems Repairer
	84F	Visual info/AudiDocumentation Specialist
	94B	Food Service Specialist
25	71L	Administrative Specialist
	73C	Finance Specialist

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VOLUME 2
APPENDICES

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VOLUME 2

CONTENTS

Appendix A1

Percent Acquisition by MOS from Seabrook Reports (in 1989)

MOS	Name	Percent
11B	Infantryman	12.50
11C	Indirect Fire Infantryman	1.87
11H	Heavy Anti-Armor Weapons Infantryman	1.99
11M	Fighting Vehicle Infantryman	0.32
12B	Combat Engineer	3.34
12C	Bridge Crewmember	0.41
12F	Engineering Tracked Vehicle Crewman	0.22
13B	Cannon Crewmember	4.17
13C	Tacfire Operations Specialist	0.13
13E	Cannon Fire Direction Specialist	0.59
13F	Fire Support Specialist	1.20
13M	Multiple Launch Rocket Sys (MLRS) Crewmember	0.62
13N	Lance Crewmember	0.31
13R	Fa Firefinder Radar Operator	0.16
14D	Hawk Missile Crewmember	0.03
16E	Hawk Fire Control Crewmember	0.33
16P	Chaparral Crewmember	0.85
16R	Vulcan Crewmember	1.09
16S	Man Portable Air Defense System Crewmember	1.76
19D	Cavalry Scout	5.20
19E	M48-M60 Armor Crewman	0.22
19K	M1 Abrams Armor Crewman	0.03
24Z	Combined (24C, 24G, 24N)	0.18
25S	Still Documentation Specialist	0.01
27E	TOW/Dragon Repairer	0.27
29V	Strategic Microwave Systems Repairer	0.04
31C	Single Channel Radio Operator	1.62
31K	Combat Signaler	1.64
31L	Wire Systems Installer	0.86
31N	Communications Systems/Circuit Controller	0.25
31P	Microwave Systems Operator-Maintainer	0.16
31Q	Tactical Satellite/Microwave System Op	0.40
31R	Multichannel Transmission Systems Operator	1.70
31S	Satellite Communications System Operator	0.15
31V	Unit Level Communications Maintainer	0.94
35E	Radio and Communications Security Repairer	0.18
35H	TMDE Maintenance Support Specialist	0.07
35J	Telecommunications Terminal Device Repairs	0.15
35N	Wire Systems Equipment Repairer	0.20
36M	Switching Systems Operator	0.21
41C	Fire Control Instrument Repairer	0.04

Percent Acquisition by MOS from Seabrook Reports (in 1989)

MOS	Name	Percent
44B	Metal Worker	0.29
44E	Machinist	0.07
45B	Small Arms Repairer	0.09
45D	Self-Propelled FA Turret Mechanic	0.12
45E	M1 Abrams Tank Turret Mechanic	0.21
45K	Tank Turret Repairer	0.19
45L	Artillery Repairer	0.10
45N	M60A1/A3 Tank Turret Mechanic	0.04
45T	Bradley Fighting Vehicle Sys Turret Mech	0.23
46Z	Combined (46Q, 46R)	0.13
51B	Carpentry and Masonry Specialist	0.28
51K	Plumber	0.06
51M	Firefighter	0.03
51R	Interior Electrician	0.07
51T	Technical Engineering Specialist	0.02
52C	Utility Equipment Repairer	0.30
52D	Power Generator Equipment Repairer	1.16
54B	Chemical Operations Specialist	1.08
55B	Ammunitions Specialist	0.59
55D	Explosive Ordinance Disposal (EOD) Spec	0.08
57E	Laundry and Bath Specialist	0.12
62B	Construction Equipment Repairer	0.43
62E	Heavy Construction Equipment Operator	0.47
62F	Crane Operator	0.19
62J	General Construction Equipment Operator	0.38
63B	Light-Wheel Vehicle Mechanic	3.05
63D	Self-Propelled Field Artillery Sys Mech	0.34
63E	M1 Abrams Tank System Mechanic	0.53
63G	Fuel and Electrical System Repairer	0.09
63H	Track Vehicle Repairer	0.51
63J	Quartermaster and Chemical Equip Repairer	0.36
63N	M60A1/A3 Tank System Mechanic	0.11
63S	Heavy-Wheel Vehicle Mechanic	0.99
63T	Bradley Fighting Vehicle Sys Mechanic	0.81
63W	Wheel Vehicle Repairer	1.04
63Y	Track Vehicle Mechanic	0.34
67N	Utility Helicopter Repairer	0.35
67R	AH-64 Attack Helicopter Repairer	0.27
67T	Tactical Transport Helicopter Repairer	0.39
67U	Medium Helicopter Repairer	0.25
67V	Observation/Scout Helicopter Repairer	0.17
67Y	AH-1 Attack Helicopter Repairer	0.28

Percent Acquisition by MOS from Seabrook Reports (in 1989)

MOS	Name	Percent
68B	Aircraft Powerplant Repairer	0.06
68D	Aircraft Powertrain Repairer	0.08
68F	Aircraft Electrician	0.08
68G	Aircraft Structural Repairer	0.14
68J	Aircraft Armament/Missile Systems Repairer	0.24
68M	Aircraft Weapon Systems Repairer	0.09
68N	Avionic Mechanic	0.04
68Z	Avionic Communications Equipment Repairer	0.02
71D	Legal Specialist	0.23
71G	Patient Administration Specialist	0.17
71L	Administrative Specialist	1.24
71M	Chaplain Assistant	0.20
72E	Tactical Telecommunications Center Op	0.75
72G	Automatic Data Telecommunications Center Op	0.54
73C	Finance Specialist	0.26
73D	Accounting Specialist	0.09
74B	Information Systems Operator	0.10
75B	Personnel Administration Specialist	0.75
75C	Personnel Management Specialist	0.14
75D	Personnel Records Specialist	0.11
75E	Personnel Actions Specialist	0.20
75F	Personnel Information Sys Mgt Specialist	0.15
76J	Medical Supply Specialist	0.07
76P	Material Control and Accounting Specialist	0.63
76V	Material Storage and Handling Specialist	1.19
76X	Subsistence Supply Specialist	0.21
77F	Petroleum Supply Specialist	1.25
77W	Water Treatment Specialist	0.07
81L	Printing and Bindery Specialist	0.04
82C	Field Artillery Surveyor	0.43
88H	Cargo Specialist	0.38
88M	Motor Transport Operator	4.23
88N	Traffic Management Coordinator	0.09
91A	Medical Specialist	4.32
91D	Operating Room Specialist	0.17
91E	Dental Specialist	0.21
91F	Psychiatric Specialist	0.05
91G	Behavioral Science Specialist	0.07
91K	Medical Laboratory Specialist	0.20
91M	Hospital Food Service Specialist	0.09
91P	X-Ray Specialist	0.07
91Q	Pharmacy Specialist	0.08

Percent Acquisition by MOS from Seabrook Reports (in 1989)

MOS	Name	Percent
91R	Veterinary Food Inspection Specialist	0.11
91S	Preventive Medicine Specialist	0.11
91T	Animal Care Specialist	0.07
91Z	Combined (91H, 91J, 91U, 91X)	0.16
92A	Automated Logistical Specialist	2.19
92G	Food Service Specialist	2.82
92M	Mortuary Affairs Specialist	0.03
92R	Parachute Rigger	0.28
92Y	Unit Supply Specialist	1.91
93C	Air Traffic Control (ATC) Operator	0.26
93P	Flight Operations Coordinator	0.21
95B	Military Police	3.93
95C	Corrections Specialist	0.08
96B	Intelligence Analyst	0.46
96D	Imagery Analyst	0.17
96R	Ground Surveillance Systems Operator	0.24
97B	Counterintelligence Agent	0.33
98C	Signals Intelligence Analyst	0.79
98G	EW Signal Intelligence Voice Interrogator	1.23
98H	Morse Interceptor	0.17
98Z	Combined (98D, 98J, 98K)	0.43
55G/93F	Nuclear Weapons Spec/FA Meteorological Crewmember	0.19
27Z/29Z	Combined (24K, 24M, 27H, 27M, 27N, 29V, 29F, 29M)	0.46
25M/25Z/97E	Graphics Documentation Spec/Combined (25C, 25P)/Interrogator	0.38
15E/16J	Pershing Missile Crewmember/Defense Acquisition Radar Operator	0.49

Appendix A2

Percent Acquisition by Job Family from Seabrook Reports (in 1989)

Family	Percent
CL1	4.26
CL2	6.82
CO1	16.67
CO2	9.42
EL1	3.83
EL2	3.24
EL3	1.68
FA	6.09
GM1	2.58
GM2	2.95
MM1	8.86
MM2	2.07
OF	12.62
SC	3.06
ST1	5.60
ST2	3.95
ST3	6.30

Appendix B1

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS	Men	Women	Whites	Blacks	Total
Name	N / %	N / %	N / %	N / %	N / %
11B	35173	4	29601	5576	35177
	99.99	0.01	84.15	15.85	100.00
11C	6193	0	5348	845	6193
	100.00	0.00	86.36	13.64	100.00
11H	5633	0	4849	784	5633
	100.00	0.00	86.08	13.92	100.00
11M	4294	0	3626	668	4294
	100.00	0.00	84.44	15.56	100.00
12B	8278	0	6627	1651	8278
	100.00	0.00	80.06	19.94	100.00
12C	1868	0	1526	342	1868
	100.00	0.00	81.69	18.31	100.00
12F	571	0	449	122	571
	100.00	0.00	78.63	21.37	100.00
13B	19382	0	10529	8853	19382
	100.00	0.00	54.32	45.68	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS	Men	Women	Whites	Blacks	Total
Name	N / %	N / %	N / %	N / %	N / %
13C	676	1	517	160	677
	99.85	0.15	76.37	23.63	100.00
13E	1809	0	1366	443	1809
	100.00	0.00	75.51	24.49	100.00
13F	3856	0	3113	743	3856
	100.00	0.00	80.73	19.27	100.00
13M	746	0	663	83	746
	100.00	0.00	88.87	11.13	100.00
13N	2585	65	2204	446	2650
	97.55	2.45	83.17	16.83	100.00
13R	577	2	459	120	579
	99.65	0.35	79.27	20.73	100.00
14D	583	79	544	118	662
	88.07	11.93	82.18	17.82	100.00
16E	619	64	542	141	683
	90.63	9.37	79.36	20.64	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
16P	1061	0	894	167	1061
	100.00	0.00	84.26	15.74	100.00
16R	1919	0	1611	308	1919
	100.00	0.00	83.95	16.05	100.00
16S	2282	0	1409	873	2282
	100.00	0.00	61.74	38.26	100.00
19D	5493	0	4579	914	5493
	100.00	0.00	83.36	16.64	100.00
19E	4489	0	3553	936	4489
	100.00	0.00	79.15	20.85	100.00
19K	6456	3	5244	1215	6459
	99.95	0.05	81.19	18.81	100.00
24Z	699	35	652	82	734
	95.23	4.77	88.83	11.17	100.00
25S	283	61	300	44	344
	82.27	17.73	87.21	12.79	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS	Men	Women	Whites	Blacks	Total
Name	N / %	N / %	N / %	N / %	N / %
27E	794	72	627	239	866
	91.69	8.31	72.40	27.60	100.00
29V	760	73	725	108	833
	91.24	8.76	87.03	12.97	100.00
31C	5292	526	4857	961	5818
	90.96	9.04	83.48	16.52	100.00
31K	4406	415	2936	1885	4821
	91.39	8.61	60.90	39.10	100.00
31L	2088	541	1330	1299	2629
	79.42	20.58	50.59	49.41	100.00
31N	474	209	500	183	683
	69.40	30.60	73.21	26.79	100.00
31P	376	161	297	240	537
	70.02	29.98	55.31	44.69	100.00
31Q	1186	140	981	345	1326
	89.44	10.56	73.98	26.02	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS	Men	Women	Whites	Blacks	Total
Name	N / %	N / %	N / %	N / %	N / %
31R	5432	773	3964	2241	6205
	87.54	12.46	63.88	36.12	100.00
31S	430	55	452	33	485
	88.66	11.34	93.20	6.80	100.00
31V	3754	302	2850	1206	4056
	92.55	7.45	70.27	29.73	100.00
35E	902	76	805	173	978
	92.23	7.77	82.31	17.69	100.00
35H	245	47	276	16	292
	83.90	16.10	94.52	5.48	100.00
35J	921	69	846	144	990
	93.03	6.97	85.45	14.55	100.00
35N	647	62	479	230	709
	91.26	8.74	67.56	32.44	100.00
36M	1292	654	1089	857	1946
	66.39	33.61	55.96	44.04	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
41C	237	62	174	125	299
	79.26	20.74	58.19	41.81	100.00
44B	983	15	802	196	998
	98.50	1.50	80.36	19.64	100.00
44E	550	8	519	39	558
	98.57	1.43	93.01	6.99	100.00
45B	582	14	503	93	596
	97.65	2.35	84.40	15.60	100.00
45D	543	0	453	90	543
	100.00	0.00	83.43	16.57	100.00
45E	504	0	388	116	504
	100.00	0.00	76.98	23.02	100.00
45K	761	21	652	130	782
	97.31	2.69	83.38	16.62	100.00
45L	390	27	351	66	417
	93.53	6.47	84.17	15.83	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
45N	528	0	419	109	528
	100.00	0.00	79.36	20.64	100.00
45T	493	0	376	117	493
	100.00	0.00	76.27	23.73	100.00
46Z	292	196	450	38	488
	59.84	40.16	92.21	7.79	100.00
51B	1921	44	1576	389	1965
	97.76	2.24	80.20	19.80	100.00
51K	505	0	338	167	505
	100.00	0.00	66.93	33.07	100.00
51M	313	7	262	58	320
	97.81	2.19	81.88	18.13	100.00
51R	682	0	563	119	682
	100.00	0.00	82.55	17.45	100.00
51T	290	37	278	49	327
	88.69	11.31	85.02	14.98	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS	Men	Women	Whites	Blacks	Total
Name	N / %	N / %	N / %	N / %	N / %
52C	444	58	402	100	502
	88.45	11.55	80.08	19.92	100.00
52D	5470	246	4439	1277	5716
	95.70	4.30	77.66	22.34	100.00
54B	1158	112	934	336	1270
	91.18	8.82	73.54	26.46	100.00
55B	2143	196	1679	660	2339
	91.62	8.38	71.78	28.22	100.00
55D	369	32	395	6	401
	92.02	7.98	98.50	1.50	100.00
57E	577	156	237	496	733
	78.72	21.28	32.33	67.67	100.00
62B	2836	79	2257	658	2915
	97.29	2.71	77.43	22.57	100.00
62E	1465	10	1292	183	1475
	99.32	0.68	87.59	12.41	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
62F	472	23	384	111	495
	95.35	4.65	77.58	22.42	100.00
62J	842	8	700	150	850
	99.06	0.94	82.35	17.65	100.00
63B	10458	997	8485	2970	11455
	91.30	8.70	74.07	25.93	100.00
63D	1198	0	1113	85	1198
	100.00	0.00	92.90	7.10	100.00
63E	1304	0	1132	172	1304
	100.00	0.00	86.81	13.19	100.00
63G	719	28	631	116	747
	96.25	3.75	84.47	15.53	100.00
63H	2113	160	1581	692	2273
	92.96	7.04	69.56	30.44	100.00
63J	1060	172	563	669	1232
	86.04	13.96	45.70	54.30	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
63N	721	0	603	118	721
	100.00	0.00	83.63	16.37	100.00
63S	2391	43	2236	198	2434
	98.23	1.77	91.87	8.13	100.00
63T	3240	0	3042	198	3240
	100.00	0.00	93.89	6.11	100.00
63W	2714	164	2063	815	2878
	94.30	5.70	71.68	28.32	100.00
63Y	926	16	855	87	942
	98.30	1.70	90.76	9.24	100.00
67N	1259	25	1203	81	1284
	98.05	1.95	93.69	6.31	100.00
67R	220	8	188	40	228
	96.49	3.51	82.46	17.54	100.00
67T	1465	46	1397	114	1511
	96.96	3.04	92.46	7.54	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
67U	1501	11	1374	138	1512
	99.27	0.73	90.87	9.13	100.00
67V	1622	36	1528	130	1658
	97.83	2.17	92.16	7.84	100.00
67Y	1125	4	1062	67	1129
	99.65	0.35	94.07	5.93	100.00
68B	509	93	557	45	602
	84.55	15.45	92.52	7.48	100.00
68D	673	20	618	75	693
	97.11	2.89	89.18	10.82	100.00
68F	634	30	606	58	664
	95.48	4.52	91.27	8.73	100.00
68G	828	14	771	71	842
	98.34	1.66	91.57	8.43	100.00
68J	1016	32	889	159	1048
	96.95	3.05	84.83	15.17	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
68M	345	13	291	67	358
	96.37	3.63	81.28	18.72	100.00
68N	338	117	352	103	455
	74.29	25.71	77.36	22.64	100.00
68Z	565	109	517	157	674
	83.83	16.17	76.71	23.29	100.00
71D	902	456	1063	295	1358
	66.42	33.58	78.28	21.72	100.00
71G	574	441	478	537	1015
	56.55	43.45	47.09	52.91	100.00
71L	4235	6793	5661	5367	11028
	38.40	61.60	51.33	48.67	100.00
71M	594	322	709	207	916
	64.85	35.15	77.40	22.60	100.00
72E	1223	339	938	624	1562
	78.30	21.70	60.05	39.95	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
72G	815	804	964	655	1619
	50.34	49.66	59.54	40.46	100.00
73C	1159	912	1107	964	2071
	55.96	44.04	53.45	46.55	100.00
73D	285	183	348	120	468
	60.90	39.10	74.36	25.64	100.00
74B	800	338	911	227	1138
	70.30	29.70	80.05	19.95	100.00
75B	2546	1279	1986	1839	3825
	66.56	33.44	51.92	48.08	100.00
75C	1196	1142	1051	1287	2338
	51.15	48.85	44.95	55.05	100.00
75D	910	1628	1045	1493	2538
	35.86	64.14	41.17	58.83	100.00
75E	521	763	540	744	1284
	40.58	59.42	42.06	57.94	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
75F	331	268	359	240	599
	55.26	44.74	59.93	40.07	100.00
76J	610	309	446	473	919
	66.38	33.62	48.53	51.47	100.00
76P	2090	598	1271	1417	2688
	77.75	22.25	47.28	52.72	100.00
76V	4126	1089	2815	2400	5215
	79.12	20.88	53.98	46.02	100.00
76X	349	172	254	267	521
	66.99	33.01	48.75	51.25	100.00
77F	5762	946	3754	2954	6708
	85.90	14.10	55.96	44.04	100.00
77W	615	126	363	378	741
	83.00	17.00	48.99	51.01	100.00
81L	218	98	164	152	316
	68.99	31.01	51.90	48.10	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS	Men	Women	Whites	Blacks	Total
Name	N / %	N / %	N / %	N / %	N / %
82C	766	0	587	179	766
	100.00	0.00	76.63	23.37	100.00
88H	1275	170	841	604	1445
	88.24	11.76	58.20	41.80	100.00
88M	12214	1588	9449	4353	13802
	88.49	11.51	68.46	31.54	100.00
88N	957	833	967	823	1790
	53.46	46.54	54.02	45.98	100.00
91A	11512	2821	10344	3989	14333
	80.32	19.68	72.17	27.83	100.00
91D	401	295	504	192	696
	57.61	42.39	72.41	27.59	100.00
91E	586	524	634	476	1110
	52.79	47.21	57.12	42.88	100.00
91F	239	206	330	115	445
	53.71	46.29	74.16	25.84	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
91G	142	151	251	42	293
	48.46	51.54	85.67	14.33	100.00
91K	657	643	915	385	1300
	50.54	49.46	70.38	29.62	100.00
91M	241	248	310	179	489
	49.28	50.72	63.39	36.61	100.00
91P	424	245	547	122	669
	63.38	36.62	81.76	18.24	100.00
91Q	363	232	415	180	595
	61.01	38.99	69.75	30.25	100.00
91R	368	155	377	146	523
	70.36	29.64	72.08	27.92	100.00
91S	250	213	324	139	463
	54.00	46.00	69.98	30.02	100.00
91T	173	150	283	40	323
	53.56	46.44	87.62	12.38	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS	Men	Women	Whites	Blacks	Total
Name	N / %	N / %	N / %	N / %	N / %
91Z	391	212	446	157	603
	64.84	35.16	73.96	26.04	100.00
92A	4849	290	2943	2196	5139
	94.36	5.64	57.27	42.73	100.00
92G	8241	1977	5273	4945	10218
	80.65	19.35	51.61	48.39	100.00
92M	247	34	170	111	281
	87.90	12.10	60.50	39.50	100.00
92R	888	70	780	178	958
	92.69	7.31	81.42	18.58	100.00
92Y	8310	1576	5589	4297	9886
	84.06	15.94	56.53	43.47	100.00
93C	529	79	562	46	608
	87.01	12.99	92.43	7.57	100.00
93P	726	526	905	347	1252
	57.99	42.01	72.28	27.72	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
95B	13154	2400	14091	1463	15554
	84.57	15.43	90.59	9.41	100.00
95C	289	20	219	90	309
	93.53	6.47	70.87	29.13	100.00
96B	614	171	722	63	785
	78.22	21.78	91.97	8.03	100.00
96D	202	138	273	67	340
	59.41	40.59	80.29	19.71	100.00
96R	753	0	595	158	753
	100.00	0.00	79.02	20.98	100.00
97B	354	68	409	13	422
	83.89	16.11	96.92	3.08	100.00
98C	415	133	537	11	548
	75.73	24.27	97.99	2.01	100.00
98G	953	255	1174	34	1208
	78.89	21.11	97.19	2.81	100.00

Sample Sizes by Total, Gender and Race for Each Job/Family (First Tier)

MOS Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
98H	757	181	812	126	938
	80.70	19.30	86.57	13.43	100.00
98Z	319	123	371	71	442
	72.17	27.83	83.94	16.06	100.00
147	398	89	356	131	487
	81.72	18.28	73.10	26.90	100.00
148	878	69	811	136	947
	92.71	7.29	85.64	14.36	100.00
149	825	382	1021	186	1207
	68.35	31.65	84.59	15.41	100.00
150	364	15	309	70	379
	96.04	3.96	81.53	18.47	100.00
Totals	313703	44266	259372	98597	357969
	87.63	12.37	72.46	27.54	100.00

Appendix B2

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
75D	910	1628	2538	.266	.282	.315	.306
	35.86	64.14	100	.224	.205	.204	.179
71L	4235	6793	11028	.431	.420	.400	.381
	38.40	61.60	100	.088	.090	.083	.082
75E	521	763	1284	.831	.799	.738	.730
	4.58	59.42	100	.208	.193	.223	.214
91G	142	151	293	.309	.274	.051	.236
	48.46	51.54	100	.455	.471	.436	.441
91M	241	248	489	.115	.157	-.047	-.044
	49.28	50.72	100	.323	.269	.317	.292
72G	815	804	1619	-.146	-.158	-.154	-.149
	50.34	49.66	100	.098	.120	.109	.106
91K	657	643	1300	-.038	-.036	-.045	-.025
	50.54	49.46	100	.137	.133	.132	.122
75C	1196	1142	2338	.345	.409	.333	.266
	51.15	48.85	100	.224	.190	.218	.222
91E	586	524	1110	.134	.047	-.020	-.013
	52.79	47.21	100	.146	.143	.172	.164

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
88N	957	833	1790	-.098	-.092	-.117	-.168
	53.46	46.54	100	.120	.128	.143	.141
91T	173	150	323	-.195	-.133	-.177	-.090
	53.56	46.44	100	.264	.283	.268	.298
91F	239	206	445	-.083	-.052	-.076	-.046
	53.71	46.29	100	.222	.181	.207	.185
91S	250	213	463	.337	.306	.301	.369
	54.00	46.00	100	.388	.368	.353	.251
75F	331	268	599	-.043	.149	-.040	.136
	55.26	44.74	100	.237	.249	.240	.269
73C	1159	912	2071	.107	.152	.094	.030
	55.96	44.04	100	.094	.139	.097	.147
71G	574	441	1015	.491	.501	.429	.385
	56.55	43.45	100	.224	.204	.238	.186
91D	401	295	696	.596	.643	.653	.612
	57.61	42.39	100	.228	.174	.204	.205
93P	726	526	1252	1.389	1.371	1.263	1.245
	57.99	42.01	100	.119	.121	.146	.152
96D	202	138	340	1.326	1.267	1.334	1.269

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	59.41	40.59	100	.161	.198	.177	.198
46Z	292	196	488	.391	.363	.380	.346
	59.84	40.16	100	.252	.201	.271	.240
73D	285	183	468	.465	.471	.497	.523
	60.90	39.10	100	.303	.315	.323	.337
91Q	363	232	595	.646	.744	.509	.633
	61.01	38.99	100	.263	.307	.280	.272
91P	424	245	669	.051	.117	.039	.109
	63.38	36.62	100	.319	.329	.341	.287
91Z	391	212	603	-.305	-.186	-.268	-.233
	64.84	35.16	100	.207	.164	.169	.163
71M	594	322	916	.191	.196	.127	.141
	64.85	35.15	100	.211	.185	.202	.224
76J	610	309	919	.581	.564	.452	.487
	66.38	33.62	100	.260	.257	.319	.314
36M	1292	654	1946	-.122	-.142	-.011	-.015
	66.39	33.61	100	.192	.204	.207	.179
71D	902	456	1358	1.157	1.174	1.048	1.073
	66.42	33.58	100	.153	.159	.166	.162

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

Name	Men N / %	Women N / %	Total N / %	9 Tests MPP/SD	Dropping No MPP/SD	Dropping CS MPP/SD	Dropping No and CS MPP/SD
75B	2546	1279	3825	.721	.723	.675	.670
	66.56	33.44	100	.091	.074	.100	.088
76X	349	172	521	.371	.337	.377	.324
	66.99	33.01	100	.177	.161	.186	.183
149	825	382	1207	-.083	-.454	-.122	-.441
	68.35	31.65	100	.208	.172	.205	.159
81L	218	98	316	-.549	-.575	-.778	-.811
	68.99	31.01	100	.435	.386	.356	.373
31N	474	209	683	.715	.730	.689	.697
	69.40	30.60	100	.217	.227	.217	.189
31P	376	161	537	-.220	-.251	-.239	-.252
	70.02	29.98	100	.160	.144	.155	.151
74B	800	338	1138	.499	.413	.386	.329
	70.30	29.70	100	.259	.280	.310	.314
91R	368	155	523	.331	.520	.424	.543
	70.36	29.64	100	.297	.350	.328	.309
98Z	319	123	442	.688	.683	.342	.314
	72.17	27.83	100	.211	.223	.299	.264

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
68N	338	117	455	.576	.536	.486	.400
	74.29	25.71	100	.285	.315	.325	.313
98C	415	133	548	.981	1.083	.961	1.084
	75.73	24.27	100	.091	.085	.092	.068
76P	2090	598	2688	.229	.254	.214	.207
	77.75	22.25	100	.124	.130	.134	.131
96B	614	171	785	1.300	1.266	1.233	1.177
	78.22	21.78	100	.130	.119	.135	.141
72E	1223	339	1562	-.028	-.032	-.048	-.049
	78.30	21.70	100	.107	.109	.120	.106
57E	577	156	733	.004	-.098	-.088	-.100
	78.72	21.28	100	.154	.182	.172	.155
98G	953	255	1208	-.338	-.347	-.309	-.314
	78.89	21.11	100	.065	.067	.064	.057
76V	4126	1089	5215	-.024	-.076	.019	-.013
	79.12	20.88	100	.082	.082	.068	.065
41C	237	62	299	-.236	-.162	-.224	-.202
	79.26	20.74	100	.349	.306	.335	.313
31L	2088	541	2629	.029	.041	.039	.080

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	79.42	20.58	100	.113	.091	.102	.065
91A	11512	2821	14333	-.164	-.153	-.187	-.178
	80.32	19.68	100	.043	.036	.040	.042
92G	8241	1977	10218	.711	.721	.730	.731
	80.65	19.35	100	.047	.039	.043	.042
98H	757	181	938	-.173	-.196	-.088	-.098
	80.70	19.30	100	.217	.186	.189	.212
First 50 Average							
	1178	617	1795	.266	.264	.247	.240
	63.87	36.13	100	.124	.119	.125	.120
147	398	89	487	.581	.549	.466	.512
	81.72	18.28	100	.167	.199	.218	.196
25S	283	61	344	.559	.595	.620	.762
	82.27	17.73	100	.461	.415	.404	.378
77W	615	126	741	-.178	-.240	-.158	-.202
	83.00	17.00	100	.172	.208	.232	.221
68Z	565	109	674	1.073	1.064	.919	.697
	83.83	16.17	100	.273	.269	.266	.361

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
97B	354	68	422	.413	.507	.370	.551
	83.89	16.11	100	.265	.225	.249	.235
35H	245	47	292	-.029	.099	.008	.104
	83.90	16.10	100	.243	.344	.285	.297
92Y	8310	1576	9886	-.256	-.261	-.267	-.267
	84.06	15.94	100	.038	.031	.033	.031
68B	509	93	602	-.474	-.514	-.370	-.385
	84.55	15.45	100	.291	.230	.238	.270
95B	13154	2400	15554	.103	.095	.129	.118
	84.57	15.43	100	.067	.062	.056	.055
77F	5762	946	6708	.760	.771	.781	.798
	85.90	14.10	100	.058	.063	.060	.064
63J	1060	172	1232	.318	.272	.328	.246
	86.04	13.96	100	.133	.141	.125	.164
93C	529	79	608	-.008	.028	-.029	-.098
	87.01	12.99	100	.196	.177	.192	.187
31R	5432	773	6205	.523	.504	.553	.511
	87.54	12.46	100	.058	.076	.067	.077
92M	247	34	281	-.064	-.066	-.103	-.087

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	87.90	12.10	100	.326	.328	.317	.318
14D	583	79	662	.437	.652	.588	.698
	88.07	11.93	100	.347	.277	.292	.298
88H	1275	170	1445	-.194	-.215	-.161	-.169
	88.24	11.76	100	.103	.102	.104	.097
52C	444	58	502	.623	.618	.518	.500
	88.45	11.55	100	.235	.234	.184	.198
88M	12214	1588	13802	.020	.026	.012	.009
	88.49	11.51	100	.036	.036	.036	.035
31S	430	55	485	.900	.957	.807	.782
	88.66	11.34	100	.225	.274	.217	.233
51T	290	37	327	.165	.295	.191	.370
	88.69	11.31	100	.381	.395	.338	.344
31Q	1186	140	1326	.312	.316	.268	.292
	89.44	1.56	100	.134	.162	.150	.155
16E	619	64	683	-.120	-.163	-.090	-.134
	9.63	9.37	100	.179	.152	.194	.165
31C	5292	526	5818	.477	.479	.511	.537
	9.96	9.04	100	.087	.087	.078	.093

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
54B	1158	112	1270	1.332	1.335	1.294	1.283
	91.18	8.82	100	.071	.069	.076	.069
29V	760	73	833	.377	.467	.276	.290
	91.24	8.76	100	.367	.315	.322	.335
35N	647	62	709	.251	.265	.125	.031
	91.26	8.74	100	.195	.212	.249	.178
63B	10458	997	11455	.863	.860	.858	.816
	91.30	8.70	100	.047	.058	.054	.048
31K	4406	415	4821	.502	.527	.616	.628
	91.39	8.61	100	.071	.058	.050	.049
55B	2143	196	2339	.571	.571	.384	.282
	91.62	8.38	100	.115	.119	.147	.111
27E	794	72	866	-.148	-.162	-.159	-.201
	91.69	8.31	100	.162	.155	.151	.178
55D	369	32	401	.030	.055	-.036	.201
	92.02	7.98	100	.409	.346	.378	.288
35E	902	76	978	.441	.425	.358	.374
	92.23	7.77	100	.257	.282	.212	.253

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
31V	3754	302	4056	.352	.329	.341	.329
	92.55	7.45	100	.122	.094	.100	.107
92R	888	70	958	-.122	-.040	-.118	.011
	92.69	7.31	100	.149	.153	.129	.150
148	878	69	947	.312	.336	.183	.072
	92.71	7.29	100	.132	.140	.143	.107
63H	2113	160	2273	-.103	-.095	-.133	-.115
	92.96	7.04	100	.114	.117	.111	.106
35J	921	69	990	.504	.599	.464	.581
	93.03	6.97	100	.215	.227	.216	.213
45L	390	27	417	.442	.414	.324	.290
	93.53	6.47	100	.374	.316	.294	.281
95C	289	20	309	-.706	-.666	-.632	-.752
	93.53	6.47	100	.234	.192	.197	.218
63W	2714	164	2878	.896	.930	.877	.953
	94.30	5.70	100	.067	.069	.066	.075
92A	4849	290	5139	.339	.327	.346	.343
	94.36	5.64	100	.062	.062	.060	.057
24Z	699	35	734	-.426	-.407	-.410	-.382

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	95.23	4.77	100	.152	.144	.175	.167
62F	472	23	495	.319	.368	.517	.468
	95.35	4.65	100	.269	.252	.262	.248
68F	634	30	664	.616	.844	.695	.611
	95.48	4.52	100	.326	.293	.324	.341
52D	5470	246	5716	1.440	1.447	1.455	1.474
	95.70	4.30	100	.059	.054	.055	.043
150	364	15	379	-.530	-.522	-.523	-.524
	96.04	3.96	100	.171	.184	.189	.199
63G	719	28	747	.085	.361	.119	.132
	96.25	3.75	100	.337	.209	.295	.303
68M	345	13	358	.082	.052	.038	-.010
	96.37	3.63	100	.338	.353	.380	.376
67R	220	8	228	.371	.395	.239	.295
	96.49	3.51	100	.269	.240	.225	.214
68J	1016	32	1048	-.218	-.210	.023	-.053
	96.95	3.05	100	.221	.216	.203	.212
Second 50 Average							
	2163	259	2422	.359	.365	.363	.358

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	9.30	9.70	100	.093	.091	.089	.089
67T	1465	46	1511	.702	.711	.696	.741
	96.96	3.04	100	.156	.170	.177	.156
68D	673	20	693	-.397	-.460	-.439	-.482
	97.11	2.89	100	.336	.280	.303	.328
62B	2836	79	2915	1.091	1.094	1.136	1.195
	97.29	2.71	100	.087	.088	.089	.088
45K	761	21	782	.536	.538	.524	.546
	97.31	2.69	100	.184	.194	.194	.173
13N	2585	65	2650	.051	.127	.080	.161
	97.55	2.45	100	.132	.117	.172	.110
45B	582	14	596	.326	.461	.411	.448
	97.65	2.35	100	.322	.248	.267	.244
51B	1921	44	1965	.271	.194	.249	.188
	97.76	2.24	100	.128	.140	.109	.117
51M	313	7	320	-.031	-.029	-.132	-.221
	97.81	2.19	100	.263	.240	.283	.233
67V	1622	36	1658	.115	.067	-.028	-.053

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	97.83	2.17	100	.236	.206	.151	.186
67N	1259	25	1284	1.059	1.033	1.097	1.089
	98.05	1.95	100	.134	.093	.129	.114
63S	2391	43	2434	.583	.571	.579	.570
	98.23	1.77	100	.088	.087	.095	.082
63Y	926	16	942	1.024	.995	.988	1.015
	98.30	1.70	100	.114	.116	.133	.105
68G	828	14	842	1.073	1.088	1.030	1.140
	98.34	1.66	100	.170	.166	.180	.143
44B	983	15	998	.816	.827	.822	.829
	98.50	1.50	100	.162	.178	.150	.158
44E	550	8	558	1.219	1.294	1.374	1.393
	98.57	1.43	100	.234	.221	.232	.226
62J	842	8	850	.260	.231	.221	.201
	99.06	.94	100	.154	.141	.131	.130
67U	1501	11	1512	1.331	1.350	1.325	1.270
	99.27	.73	100	.096	.102	.096	.118
62E	1465	10	1475	.647	.662	.728	.671
	99.32	.68	100	.139	.135	.117	.107

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
67Y	1125	4	1129	.682	.669	.729	.696
	99.65	.35	100	.124	.129	.135	.117
13R	577	2	579	.236	-.176	.203	-.178
	99.65	.35	100	.225	.217	.182	.228
11B	35173	0	35173	-.372	-.388	-.399	-.406
	100	0	100	.015	.015	.014	.014
63N	721	0	721	.714	.667	.685	.692
	100	0	100	.191	.198	.187	.224
12C	1868	0	1868	.175	.164	.242	.273
	100	0	100	.135	.136	.120	.108
45D	543	0	543	-.062	-.072	-.102	-.113
	100	0	100	.223	.236	.227	.258
13E	1809	0	1809	.708	.701	.785	.746
	100	0	100	.094	.095	.097	.100
45E	504	0	504	-.438	-.520	-.346	-.280
	100	0	100	.161	.176	.155	.164
11C	6193	0	6193	.054	.001	.061	-.010
	100	0	100	.067	.072	.064	.064

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
63E	1304	0	1304	.721	.762	.719	.761
	100	0	100	.103	.105	.126	.114
13M	746	0	746	-.147	-.171	-.319	-.292
	100	0	100	.126	.100	.138	.136
45N	528	0	528	.839	.744	.878	.756
	100	0	100	.323	.356	.281	.374
13B	19382	0	19382	-.271	-.256	-.304	-.303
	100	0	100	.039	.036	.041	.041
82C	766	0	766	1.070	1.067	1.055	1.034
	100	0	100	.093	.109	.115	.118
11M	4294	0	4294	-.453	-.466	-.438	-.451
	100	0	100	.074	.072	.080	.078
45T	493	0	493	.422	.422	.421	.467
	100	0	100	.216	.209	.212	.188
51K	505	0	505	.676	.639	.606	.565
	100	0	100	.227	.243	.239	.295
63D	1198	0	1198	.605	.595	.603	.607
	100	0	100	.133	.109	.132	.112
51R	682	0	682	.402	.399	.410	.516

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	100	0	100	.397	.357	.393	.398
19K	6456	0	6456	.366	.329	.340	.279
	100	0	100	.224	.177	.226	.177
13F	3856	0	3856	.302	.345	.312	.351
	100	0	100	.103	.094	.096	.062
19E	4489	0	4489	.148	.111	.156	.188
	100	0	100	.145	.137	.135	.117
13C	676	0	676	.704	.697	.687	.651
	100	0	100	.296	.274	.240	.216
19D	5493	0	5493	.141	.134	.145	.160
	100	0	100	.047	.038	.039	.041
12F	571	0	571	.092	.100	.071	.016
	100	0	100	.138	.168	.171	.163
16S	2282	0	2282	-.120	-.131	-.070	-.109
	100	0	100	.089	.079	.073	.077
12B	8278	0	8278	-.009	.000	.016	.020
	100	0	100	.056	.049	.057	.051
16R	1919	0	1919	.339	.293	.324	.282
	100	0	100	.107	.087	.088	.094

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Females in Jobs (First Tier)

	Men	Women	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
11H	5633	0	5633	.124	.125	.090	.082
	100	0	100	.074	.067	.068	.056
16P	1061	0	1061	.402	.395	.392	.367
	100	0	100	.104	.107	.108	.100
96R	753	0	753	.468	.474	.450	.451
	100	0	100	.161	.161	.153	.183
63T	3240	0	3240	.434	.474	.464	.472
	100	0	100	.068	.061	.074	.075
Third 50 Average							
	2932	10	2942	.067	.059	.059	.052
	99.28	.72	100	.085	.079	.083	.078

Appendix B3

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
57E	237	496	733	.004	-.098	-.088	-.100
	32.33	67.67	100	.154	.182	.172	.155
75D	1045	1493	2538	.266	.282	.315	.306
	41.17	58.83	100	.224	.205	.204	.179
75E	540	744	1284	.831	.799	.738	.730
	42.06	57.94	100	.208	.193	.223	.214
75C	1051	1287	2338	.345	.409	.333	.266
	44.95	55.05	100	.224	.190	.218	.222
63J	563	669	1232	.318	.272	.328	.246
	45.70	54.30	100	.133	.141	.125	.164
71G	478	537	1015	.491	.501	.429	.385
	47.09	52.91	100	.224	.204	.238	.186
76P	1271	1417	2688	.229	.254	.214	.207
	47.28	52.72	100	.124	.130	.134	.131
76J	446	473	919	.581	.564	.452	.487
	48.53	51.47	100	.260	.257	.319	.314
76X	254	267	521	.371	.337	.377	.324

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	48.75	51.25	100	.177	.161	.186	.183
77W	363	378	741	-.178	-.240	-.158	-.202
	48.99	51.01	100	.172	.208	.232	.221
31L	1330	1299	2629	.029	.041	.039	.080
	50.59	49.41	100	.113	.091	.102	.065
71L	5661	5367	11028	.431	.420	.400	.381
	51.33	48.67	100	.088	.090	.083	.082
92G	5273	4945	10218	.711	.721	.730	.731
	51.61	48.39	100	.047	.039	.043	.042
81L	164	152	316	-.549	-.575	-.778	-.811
	51.90	48.10	100	.435	.386	.356	.373
75B	1986	1839	3825	.721	.723	.675	.670
	51.92	48.08	100	.091	.074	.100	.088
73C	1107	964	2071	.107	.152	.094	.030
	53.45	46.55	100	.094	.139	.097	.147
76V	2815	2400	5215	-.024	-.076	.019	-.013
	53.98	46.02	100	.082	.082	.068	.065
88N	967	823	1790	-.098	-.092	-.117	-.168

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	54.02	45.98	100	.120	.128	.143	.141
13B	10529	8853	19382	-.271	-.256	-.304	-.303
	54.32	45.68	100	.039	.036	.041	.041
31P	297	240	537	-.220	-.251	-.239	-.252
	55.31	44.69	100	.160	.144	.155	.151
36M	1089	857	1946	-.122	-.142	-.011	-.015
	55.96	44.04	100	.192	.204	.207	.179
77F	3754	2954	6708	.760	.771	.781	.798
	55.96	44.04	100	.058	.063	.060	.064
92Y	5589	4297	9886	-.256	-.261	-.267	-.267
	56.53	43.47	100	.038	.031	.033	.031
91E	634	476	1110	.134	.047	-.020	-.013
	57.12	42.88	100	.146	.143	.172	.164
92A	2943	2196	5139	.339	.327	.346	.343
	57.27	42.73	100	.062	.062	.060	.057
41C	174	125	299	-.236	-.162	-.224	-.202
	58.19	41.81	100	.349	.306	.335	.313

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
88H	841	604	1445	-.194	-.215	-.161	-.169
	58.20	41.80	100	.103	.102	.104	.097
72G	964	655	1619	-.146	-.158	-.154	-.149
	59.54	40.46	100	.098	.120	.109	.106
75F	359	240	599	-.043	.149	-.040	.136
	59.93	40.07	100	.237	.249	.240	.269
72E	938	624	1562	-.028	-.032	-.048	-.049
	60.05	39.95	100	.107	.109	.120	.106
92M	170	111	281	-.064	-.066	-.103	-.087
	60.50	39.50	100	.326	.328	.317	.318
31K	2936	1885	4821	.502	.527	.616	.628
	60.90	39.10	100	.071	.058	.050	.049
16S	1409	873	2282	-.120	-.131	-.070	-.109
	61.74	38.26	100	.089	.079	.073	.077
91M	310	179	489	.115	.157	-.047	-.044
	63.39	36.61	100	.323	.269	.317	.292
31R	3964	2241	6205	.523	.504	.553	.511
	63.88	36.12	100	.058	.076	.067	.077

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
51K	338	167	505	.676	.639	.606	.565
	66.93	33.07	100	.227	.243	.239	.295
35N	479	230	709	.251	.265	.125	.031
	67.56	32.44	100	.195	.212	.249	.178
88M	9449	4353	13802	.020	.026	.012	.009
	68.46	31.54	100	.036	.036	.036	.035
63H	1581	692	2273	-.103	-.095	-.133	-.115
	69.56	30.44	100	.114	.117	.111	.106
91Q	415	180	595	.646	.744	.509	.633
	69.75	30.25	100	.263	.307	.280	.272
91S	324	139	463	.337	.306	.301	.369
	69.98	30.02	100	.388	.368	.353	.251
31V	2850	1206	4056	.352	.329	.341	.329
	70.27	29.73	100	.122	.094	.100	.107
91K	915	385	1300	-.038	-.036	-.045	-.025
	70.38	29.62	100	.137	.133	.132	.122
95C	219	90	309	-.706	-.666	-.632	-.752
	70.87	29.13	100	.234	.192	.197	.218

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
63W	2063	815	2878	.896	.930	.877	.953
	71.68	28.32	100	.067	.069	.066	.075
55B	1679	660	2339	.571	.571	.384	.282
	71.78	28.22	100	.115	.119	.147	.111
91R	377	146	523	.331	.520	.424	.543
	72.08	27.92	100	.297	.350	.328	.309
91A	10344	3989	14333	-.164	-.153	-.187	-.178
	72.17	27.83	100	.043	.036	.040	.042
93P	905	347	1252	1.389	1.371	1.263	1.245
	72.28	27.72	100	.119	.121	.146	.152
27E	627	239	866	-.148	-.162	-.159	-.201
	72.40	27.60	100	.162	.155	.151	.178
First 50 Average							
	1900	1332	3232	.176	.179	.166	.160
	58.41	41.59	100	.085	.082	.084	.083
91D	504	192	696	.596	.643	.653	.612
	72.41	27.59	100	.228	.174	.204	.205

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
147	356	131	487	.581	.549	.466	.512
	73.10	26.90	100	.167	.199	.218	.196
31N	500	183	683	.715	.730	.689	.697
	73.21	26.79	100	.217	.227	.217	.189
54B	934	336	1270	1.332	1.335	1.294	1.283
	73.54	26.46	100	.071	.069	.076	.069
91Z	446	157	603	-.305	-.186	-.268	-.233
	73.96	26.04	100	.207	.164	.169	.163
31Q	981	345	1326	.312	.316	.268	.292
	73.98	26.02	100	.134	.162	.150	.155
63B	8485	2970	11455	.863	.860	.858	.816
	74.07	25.93	100	.047	.058	.054	.048
91F	330	115	445	-.083	-.052	-.076	-.046
	74.16	25.84	100	.222	.181	.207	.185
73D	348	120	468	.465	.471	.497	.523
	74.36	25.64	100	.303	.315	.323	.337
13E	1366	443	1809	.708	.701	.785	.746
	75.51	24.49	100	.094	.095	.097	.100

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
45T	376	117	493	.422	.422	.421	.467
	76.27	23.73	100	.216	.209	.212	.188
13C	516	160	676	.704	.697	.687	.651
	76.33	23.67	100	.296	.274	.240	.216
82C	587	179	766	1.070	1.067	1.055	1.034
	76.63	23.37	100	.093	.109	.115	.118
68Z	517	157	674	1.073	1.064	.919	.697
	76.71	23.29	100	.273	.269	.266	.361
45E	388	116	504	-.438	-.520	-.346	-.280
	76.98	23.02	100	.161	.176	.155	.164
68N	352	103	455	.576	.536	.486	.400
	77.36	22.64	100	.285	.315	.325	.313
71M	709	207	916	.191	.196	.127	.141
	77.40	22.60	100	.211	.185	.202	.224
62B	2257	658	2915	1.091	1.094	1.136	1.195
	77.43	22.57	100	.087	.088	.089	.088
62F	384	111	495	.319	.368	.517	.468
	77.58	22.42	100	.269	.252	.262	.248

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
52D	4439	1277	5716	1.440	1.447	1.455	1.474
	77.66	22.34	100	.059	.054	.055	.043
71D	1063	295	1358	1.157	1.174	1.048	1.073
	78.28	21.72	100	.153	.159	.166	.162
12F	449	122	571	.092	.100	.071	.016
	78.63	21.37	100	.138	.168	.171	.163
96R	595	158	753	.468	.474	.450	.451
	79.02	20.98	100	.161	.161	.153	.183
19E	3553	936	4489	.148	.111	.156	.188
	79.15	20.85	100	.145	.137	.135	.117
13R	459	120	579	.236	-.176	.203	-.178
	79.27	20.73	100	.225	.217	.182	.228
16E	542	141	683	-.120	-.163	-.090	-.134
	79.36	20.64	100	.179	.152	.194	.165
45N	419	109	528	.839	.744	.878	.756
	79.36	20.64	100	.323	.356	.281	.374
74B	911	227	1138	.499	.413	.386	.329
	80.05	19.95	100	.259	.280	.310	.314

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
12B	6627	1651	8278	-.009	.000	.016	.020
	80.06	19.94	100	.056	.049	.057	.051
52C	402	100	502	.623	.618	.518	.500
	80.08	19.92	100	.235	.234	.184	.198
51B	1576	389	1965	.271	.194	.249	.188
	80.20	19.80	100	.128	.140	.109	.117
96D	273	67	340	1.326	1.267	1.334	1.269
	80.29	19.71	100	.161	.198	.177	.198
44B	802	196	998	.816	.827	.822	.829
	80.36	19.64	100	.162	.178	.150	.158
13F	3113	743	3856	.302	.345	.312	.351
	80.73	19.27	100	.103	.094	.096	.062
19K	5241	1215	6456	.366	.329	.340	.279
	81.18	18.82	100	.224	.177	.226	.177
68M	291	67	358	.082	.052	.038	-.010
	81.28	18.72	100	.338	.353	.380	.376
92R	780	178	958	-.122	-.040	-.118	.011
	81.42	18.58	100	.149	.153	.129	.150

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
150	309	70	379	-.530	-.522	-.523	-.524
	81.53	18.47	100	.171	.184	.189	.199
12C	1526	342	1868	.175	.164	.242	.273
	81.69	18.31	100	.135	.136	.120	.108
91P	547	122	669	.051	.117	.039	.109
	81.76	18.24	100	.319	.329	.341	.287
51M	262	58	320	-.031	-.029	-.132	-.221
	81.88	18.13	100	.263	.240	.283	.233
14D	544	118	662	.437	.652	.588	.698
	82.18	17.82	100	.347	.277	.292	.298
35E	805	173	978	.441	.425	.358	.374
	82.31	17.69	100	.257	.282	.212	.253
62J	700	150	850	.260	.231	.221	.201
	82.35	17.65	100	.154	.141	.131	.130
67R	188	40	228	.371	.395	.239	.295
	82.46	17.54	100	.269	.240	.225	.214
51R	563	119	682	.402	.399	.410	.516
	82.55	17.45	100	.397	.357	.393	.398

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
13N	2204	446	2650	.051	.127	.080	.161
	83.17	16.83	100	.132	.117	.172	.110
19D	4579	914	5493	.141	.134	.145	.160
	83.36	16.64	100	.047	.038	.039	.041
45K	652	130	782	.536	.538	.524	.546
	83.38	16.62	100	.184	.194	.194	.173
45D	453	90	543	-.062	-.072	-.102	-.113
	83.43	16.57	100	.223	.236	.227	.258
Second 50 Average							
	1304	351	1655	.488	.485	.488	.484
	78.79	21.21	100	.130	.126	.130	.121
31C	4857	961	5818	.477	.479	.511	.537
	83.48	16.52	100	.087	.087	.078	.093
63N	603	118	721	.714	.667	.685	.692
	83.63	16.37	100	.191	.198	.187	.224
98Z	371	71	442	.688	.683	.342	.314
	83.94	16.06	100	.211	.223	.299	.264
16R	1611	308	1919	.339	.293	.324	.282

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	83.95	16.05	100	.107	.087	.088	.094
11B	29599	5574	35173	-.372	-.388	-.399	-.406
	84.15	15.85	100	.015	.015	.014	.014
45L	351	66	417	.442	.414	.324	.290
	84.17	15.83	100	.374	.316	.294	.281
16P	894	167	1061	.402	.395	.392	.367
	84.26	15.74	100	.104	.107	.108	.100
45B	503	93	596	.326	.461	.411	.448
	84.40	15.60	100	.322	.248	.267	.244
11M	3626	668	4294	-.453	-.466	-.438	-.451
	84.44	15.56	100	.074	.072	.080	.078
63G	631	116	747	.085	.361	.119	.132
	84.47	15.53	100	.337	.209	.295	.303
149	1021	186	1207	-.083	-.454	-.122	-.441
	84.59	15.41	100	.208	.172	.205	.159
68J	889	159	1048	-.218	-.210	.023	-.053
	84.83	15.17	100	.221	.216	.203	.212
51T	278	49	327	.165	.295	.191	.370

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	85.02	14.98	100	.381	.395	.338	.344
35J	846	144	990	.504	.599	.464	.581
	85.45	14.55	100	.215	.227	.216	.213
148	811	136	947	.312	.336	.183	.072
	85.64	14.36	100	.132	.140	.143	.107
91G	251	42	293	.309	.274	.051	.236
	85.67	14.33	100	.455	.471	.436	.441
11H	4849	784	5633	.124	.125	.090	.082
	86.08	13.92	100	.074	.067	.068	.056
11C	5348	845	6193	.054	.001	.061	-.010
	86.36	13.64	100	.067	.072	.064	.064
98H	812	126	938	-.173	-.196	-.088	-.098
	86.57	13.43	100	.217	.186	.189	.212
63E	1132	172	1304	.721	.762	.719	.761
	86.81	13.19	100	.103	.105	.126	.114
29V	725	108	833	.377	.467	.276	.290
	87.03	12.97	100	.367	.315	.322	.335
25S	300	44	344	.559	.595	.620	.762

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
	87.21	12.79	100	.461	.415	.404	.378
62E	1292	183	1475	.647	.662	.728	.671
	87.59	12.41	100	.139	.135	.117	.107
91T	283	40	323	-.195	-.133	-.177	-.090
	87.62	12.38	100	.264	.283	.268	.298
24Z	652	82	734	-.426	-.407	-.410	-.382
	88.83	11.17	100	.152	.144	.175	.167
13M	663	83	746	-.147	-.171	-.319	-.292
	88.87	11.13	100	.126	.100	.138	.136
68D	618	75	693	-.397	-.460	-.439	-.482
	89.18	10.82	100	.336	.280	.303	.328
95B	14091	1463	15554	.103	.095	.129	.118
	90.59	9.41	100	.067	.062	.056	.055
63Y	855	87	942	1.024	.995	.988	1.015
	90.76	9.24	100	.114	.116	.133	.105
67U	1374	138	1512	1.331	1.350	1.325	1.270
	90.87	9.13	100	.096	.102	.096	.118

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
68F	606	58	664	.616	.844	.695	.611
	91.27	8.73	100	.326	.293	.324	.341
68G	771	71	842	1.073	1.088	1.030	1.140
	91.57	8.43	100	.170	.166	.180	.143
63S	2236	198	2434	.583	.571	.579	.570
	91.87	8.13	100	.088	.087	.095	.082
96B	722	63	785	1.300	1.266	1.233	1.177
	91.97	8.03	100	.130	.119	.135	.141
67V	1528	130	1658	.115	.067	-.028	-.053
	92.16	7.84	100	.236	.206	.151	.186
46Z	450	38	488	.391	.363	.380	.346
	92.21	7.79	100	.252	.201	.271	.240
93C	562	46	608	-.008	.028	-.029	-.098
	92.43	7.57	100	.196	.177	.192	.187
67T	1397	114	1511	.702	.711	.696	.741
	92.46	7.54	100	.156	.170	.177	.156
68B	557	45	602	-.474	-.514	-.370	-.385
	92.52	7.48	100	.291	.230	.238	.270

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
63D	1113	85	1198	.605	.595	.603	.607
	92.90	7.10	100	.133	.109	.132	.112
44E	519	39	558	1.219	1.294	1.374	1.393
	93.01	6.99	100	.234	.221	.232	.226
31S	452	33	485	.900	.957	.807	.782
	93.20	6.80	100	.225	.274	.217	.233
67N	1203	81	1284	1.059	1.033	1.097	1.089
	93.69	6.31	100	.134	.093	.129	.114
63T	3042	198	3240	.434	.474	.464	.472
	93.89	6.11	100	.068	.061	.074	.075
67Y	1062	67	1129	.682	.669	.729	.696
	94.07	5.93	100	.124	.129	.135	.117
35H	276	16	292	-.029	.099	.008	.104
	94.52	5.48	100	.243	.344	.285	.297
97B	409	13	422	.413	.507	.370	.551
	96.92	3.08	100	.265	.225	.249	.235
98G	1174	34	1208	-.338	-.347	-.309	-.314
	97.19	2.81	100	.065	.067	.064	.057

MPPs and Sample Sizes for 150 Jobs/Job Families Ordered by Percentages of Blacks in Jobs (First Tier)

	Whites	Blacks	Total	9 Tests	Dropping No	Dropping CS	Dropping No and CS
Name	N / %	N / %	N / %	MPP/SD	MPP/SD	MPP/SD	MPP/SD
98C	537	11	548	.981	1.083	.961	1.084
	97.99	2.01	100	.091	.085	.092	.068
55D	395	6	401	.030	.055	-.036	.201
	98.50	1.50	100	.409	.346	.378	.288
Third 50 Average							
	1983	289	2272	.074	.067	.067	.058
	89.22	10.78	100	.091	.085	.086	.085

Appendix C1

MPPs and SDs for the 9-test ASVAB Battery (First Tier)

Job	MPP	SD
Avg	.195	.013
1	-.372	.015
2	.054	.067
3	.124	.074
4	-.453	.074
5	-.009	.056
6	.175	.135
7	.092	.138
8	-.271	.039
9	.704	.296
10	.708	.094
11	.302	.103
12	-.147	.126
13	.051	.132
14	.236	.225
15	.437	.347
16	-.120	.179
17	.402	.104
18	.339	.107
19	-.120	.089
20	.141	.047
21	.148	.145
22	.366	.224
23	-.426	.152

MPPs and SDs for the 9-test ASVAB Battery (First Tier)

Job	MPP	SD
24	.559	.461
25	-.148	.162
26	.377	.367
27	.477	.087
28	.502	.071
29	.029	.113
30	.715	.217
31	-.220	.160
32	.312	.134
33	.523	.058
34	.900	.225
35	.352	.122
36	.441	.257
37	-.029	.243
38	.504	.215
39	.251	.195
40	-.122	.192
41	-.236	.349
42	.816	.162
43	1.219	.234
44	.326	.322
45	-.062	.223
46	-.438	.161
47	.536	.184
48	.442	.374
49	.839	.323

MPPs and SDs for the 9-test ASVAB Battery (First Tier)

Job	MPP	SD
50	.422	.216
51	.391	.252
52	.271	.128
53	.676	.227
54	-.031	.263
55	.402	.397
56	.165	.381
57	.623	.235
58	1.440	.059
59	1.332	.071
60	.571	.115
61	.030	.409
62	.004	.154
63	1.091	.087
64	.647	.139
65	.319	.269
66	.260	.154
67	.863	.047
68	.605	.133
69	.721	.103
70	.085	.337
71	-.103	.114
72	.318	.133
73	.714	.191
74	.583	.088
75	.434	.068

MPPs and SDs for the 9-test ASVAB Battery (First Tier)

Job	MPP	SD
76	.896	.067
77	1.024	.114
78	1.059	.134
79	.371	.269
80	.702	.156
81	1.331	.096
82	.115	.236
83	.682	.124
84	-.474	.291
85	-.397	.336
86	.616	.326
87	1.073	.170
88	-.218	.221
89	.082	.338
90	.576	.285
91	1.073	.273
92	1.157	.153
93	.491	.224
94	.431	.088
95	.191	.211
96	-.028	.107
97	-.146	.098
98	.107	.094
99	.465	.303
100	.499	.259
101	.721	.091

MPPs and SDs for the 9-test ASVAB Battery (First Tier)

Job	MPP	SD
102	.345	.224
103	.266	.224
104	.831	.208
105	-.043	.237
106	.581	.260
107	.229	.124
108	-.024	.082
109	.371	.177
110	.760	.058
111	-.178	.172
112	-.549	.435
113	1.070	.093
114	-.194	.103
115	.020	.036
116	-.098	.120
117	-.164	.043
118	.596	.228
119	.134	.146
120	-.083	.222
121	.309	.455
122	-.038	.137
123	.115	.323
124	.051	.319
125	.646	.263
126	.331	.297
127	.337	.388

MPPs and SDs for the 9-test ASVAB Battery (First Tier)

Job	MPP	SD
128	-.195	.264
129	-.305	.207
130	.339	.062
131	.711	.047
132	-.064	.326
133	-.122	.149
134	-.256	.038
135	-.008	.196
136	1.389	.119
137	.103	.067
138	-.706	.234
139	1.300	.130
140	1.326	.161
141	.468	.161
142	.413	.265
143	.981	.091
144	-.338	.065
145	-.173	.217
146	.688	.211
147	.581	.167
148	.312	.132
149	-.083	.208
150	-.530	.171

Appendix C2

MPPs and SDs for the 8-test ASVAB Battery Without NO (First Tier)

Job	MPP	SD
Avg	.193	.013
1	-.388	.015
2	.001	.072
3	.125	.067
4	-.466	.072
5	.000	.049
6	.164	.136
7	.100	.168
8	-.256	.036
9	.697	.274
10	.701	.095
11	.345	.094
12	-.171	.100
13	.127	.117
14	-.176	.217
15	.652	.277
16	-.163	.152
17	.395	.107
18	.293	.087
19	-.131	.079
20	.134	.038
21	.111	.137
22	.329	.177
23	-.407	.144

MPPs and SDs for the 8-test ASVAB Battery Without NO (First Tier)

Job	MPP	SD
24	.595	.415
25	-.162	.155
26	.467	.315
27	.479	.087
28	.527	.058
29	.041	.091
30	.730	.227
31	-.251	.144
32	.316	.162
33	.504	.076
34	.957	.274
35	.329	.094
36	.425	.282
37	.099	.344
38	.599	.227
39	.265	.212
40	-.142	.204
41	-.162	.306
42	.827	.178
43	1.294	.221
44	.461	.248
45	-.072	.236
46	-.520	.176
47	.538	.194
48	.414	.316
49	.744	.356

MPPs and SDs for the 8-test ASVAB Battery Without NO (First Tier)

Job	MPP	SD
50	.422	.209
51	.363	.201
52	.194	.140
53	.639	.243
54	-.029	.240
55	.399	.357
56	.295	.395
57	.618	.234
58	1.447	.054
59	1.335	.069
60	.571	.119
61	.055	.346
62	-.098	.182
63	1.094	.088
64	.662	.135
65	.368	.252
66	.231	.141
67	.860	.058
68	.595	.109
69	.762	.105
70	.361	.209
71	-.095	.117
72	.272	.141
73	.667	.198
74	.571	.087
75	.474	.061

MPPs and SDs for the 8-test ASVAB Battery Without NO (First Tier)

Job	MPP	SD
76	.930	.069
77	.995	.116
78	1.033	.093
79	.395	.240
80	.711	.170
81	1.350	.102
82	.067	.206
83	.669	.129
84	-.514	.230
85	-.460	.280
86	.844	.293
87	1.088	.166
88	-.210	.216
89	.052	.353
90	.536	.315
91	1.064	.269
92	1.174	.159
93	.501	.204
94	.420	.090
95	.196	.185
96	-.032	.109
97	-.158	.120
98	.152	.139
99	.471	.315
100	.413	.280
101	.723	.074

MPPs and SDs for the 8-test ASVAB Battery Without NO (First Tier)

Job	MPP	SD
102	.409	.190
103	.282	.205
104	.799	.193
105	.149	.249
106	.564	.257
107	.254	.130
108	-.076	.082
109	.337	.161
110	.771	.063
111	-.240	.208
112	-.575	.386
113	1.067	.109
114	-.215	.102
115	.026	.036
116	-.092	.128
117	-.153	.036
118	.643	.174
119	.047	.143
120	-.052	.181
121	.274	.471
122	-.036	.133
123	.157	.269
124	.117	.329
125	.744	.307
126	.520	.350
127	.306	.368

MPPs and SDs for the 8-test ASVAB Battery Without NO (First Tier)

Job	MPP	SD
128	-.133	.283
129	-.186	.164
130	.327	.062
131	.721	.039
132	-.066	.328
133	-.040	.153
134	-.261	.031
135	.028	.177
136	1.371	.121
137	.095	.062
138	-.666	.192
139	1.266	.119
140	1.267	.198
141	.474	.161
142	.507	.225
143	1.083	.085
144	-.347	.067
145	-.196	.186
146	.683	.223
147	.549	.199
148	.336	.140
149	-.454	.172
150	-.522	.184

Appendix C3

MPPs and SDs for the 8-test ASVAB Battery Without CS (First Tier)

Job	MPP	SD
Avg	.188	.013
1	-.399	.014
2	.061	.064
3	.090	.068
4	-.438	.080
5	.016	.057
6	.242	.120
7	.071	.171
8	-.304	.041
9	.687	.240
10	.785	.097
11	.312	.096
12	-.319	.138
13	.080	.172
14	.203	.182
15	.588	.292
16	-.090	.194
17	.392	.108
18	.324	.088
19	-.070	.073
20	.145	.039
21	.156	.135
22	.340	.226
23	-.410	.175

MPPs and SDs for the 8-test ASVAB Battery Without CS (First Tier)

Job	MPP	SD
24	.620	.404
25	-.159	.151
26	.276	.322
27	.511	.078
28	.616	.050
29	.039	.102
30	.689	.217
31	-.239	.155
32	.268	.150
33	.553	.067
34	.807	.217
35	.341	.100
36	.358	.212
37	.008	.285
38	.464	.216
39	.125	.249
40	-.011	.207
41	-.224	.335
42	.822	.150
43	1.374	.232
44	.411	.267
45	-.102	.227
46	-.346	.155
47	.524	.194
48	.324	.294
49	.878	.281

MPPs and SDs for the 8-test ASVAB Battery Without CS (First Tier)

Job	MPP	SD
50	.421	.212
51	.380	.271
52	.249	.109
53	.606	.239
54	-.132	.283
55	.410	.393
56	.191	.338
57	.518	.184
58	1.455	.055
59	1.294	.076
60	.384	.147
61	-.036	.378
62	-.088	.172
63	1.136	.089
64	.728	.117
65	.517	.262
66	.221	.131
67	.858	.054
68	.603	.132
69	.719	.126
70	.119	.295
71	-.133	.111
72	.328	.125
73	.685	.187
74	.579	.095
75	.464	.074

MPPs and SDs for the 8-test ASVAB Battery Without CS (First Tier)

Job	MPP	SD
76	.877	.066
77	.988	.133
78	1.097	.129
79	.239	.225
80	.696	.177
81	1.325	.096
82	-.028	.151
83	.729	.135
84	-.370	.238
85	-.439	.303
86	.695	.324
87	1.030	.180
88	.023	.203
89	.038	.380
90	.486	.325
91	.919	.266
92	1.048	.166
93	.429	.238
94	.400	.083
95	.127	.202
96	-.048	.120
97	-.154	.109
98	.094	.097
99	.497	.323
100	.386	.310
101	.675	.100

MPPs and SDs for the 8-test ASVAB Battery Without CS (First Tier)

Job	MPP	SD
102	.333	.218
103	.315	.204
104	.738	.223
105	-.040	.240
106	.452	.319
107	.214	.134
108	.019	.068
109	.377	.186
110	.781	.060
111	-.158	.232
112	-.778	.356
113	1.055	.115
114	-.161	.104
115	.012	.036
116	-.117	.143
117	-.187	.040
118	.653	.204
119	-.020	.172
120	-.076	.207
121	.051	.436
122	-.045	.132
123	-.047	.317
124	.039	.341
125	.509	.280
126	.424	.328
127	.301	.353

MPPs and SDs for the 8-test ASVAB Battery Without CS (First Tier)

Job	MPP	SD
128	-.177	.268
129	-.268	.169
130	.346	.060
131	.730	.043
132	-.103	.317
133	-.118	.129
134	-.267	.033
135	-.029	.192
136	1.263	.146
137	.129	.056
138	-.632	.197
139	1.233	.135
140	1.334	.177
141	.450	.153
142	.370	.249
143	.961	.092
144	-.309	.064
145	-.088	.189
146	.342	.299
147	.466	.218
148	.183	.143
149	-.122	.205
150	-.523	.189

Appendix C4

MPPs and SDs for the 7-test ASVAB Battery Without NO and CS (First Tier)

Job	MPP	SD
Avg	.183	.013
1	-.406	.014
2	-.010	.064
3	.082	.056
4	-.451	.078
5	.020	.051
6	.273	.108
7	.016	.163
8	-.303	.041
9	.651	.216
10	.746	.100
11	.351	.062
12	-.292	.136
13	.161	.110
14	-.178	.228
15	.698	.298
16	-.134	.165
17	.368	.100
18	.282	.094
19	-.109	.077
20	.160	.041
21	.188	.117
22	.279	.177
23	-.382	.167

MPPs and SDs for the 7-test ASVAB Battery Without NO and CS (First Tier)

Job	MPP	SD
24	.762	.378
25	-.201	.178
26	.290	.335
27	.537	.093
28	.628	.049
29	.080	.065
30	.697	.189
31	-.252	.151
32	.292	.155
33	.511	.077
34	.782	.233
35	.329	.107
36	.374	.253
37	.104	.297
38	.581	.213
39	.031	.178
40	-.015	.179
41	-.202	.313
42	.829	.158
43	1.393	.226
44	.448	.244
45	-.113	.258
46	-.280	.164
47	.546	.173
48	.290	.281
49	.756	.374

MPPs and SDs for the 7-test ASVAB Battery Without NO and CS (First Tier)

Job	MPP	SD
50	.467	.188
51	.346	.240
52	.188	.117
53	.565	.295
54	-.221	.233
55	.516	.398
56	.370	.344
57	.500	.198
58	1.474	.043
59	1.283	.069
60	.282	.111
61	.201	.288
62	-.100	.155
63	1.195	.088
64	.671	.107
65	.468	.248
66	.201	.130
67	.816	.048
68	.607	.112
69	.761	.114
70	.132	.303
71	-.115	.106
72	.246	.164
73	.692	.224
74	.570	.082
75	.472	.075

MPPs and SDs for the 7-test ASVAB Battery Without NO and CS (First Tier)

Job	MPP	SD
76	.953	.075
77	1.015	.105
78	1.089	.114
79	.295	.214
80	.741	.156
81	1.270	.118
82	-.053	.186
83	.696	.117
84	-.385	.270
85	-.482	.328
86	.611	.341
87	1.140	.143
88	-.053	.212
89	-.010	.376
90	.400	.313
91	.697	.361
92	1.073	.162
93	.385	.186
94	.381	.082
95	.141	.224
96	-.049	.106
97	-.149	.106
98	.030	.147
99	.523	.337
100	.329	.314
101	.670	.088

MPPs and SDs for the 7-test ASVAB Battery Without NO and CS (First Tier)

Job	MPP	SD
102	.266	.222
103	.306	.179
104	.730	.214
105	.136	.269
106	.487	.314
107	.207	.131
108	-.013	.065
109	.324	.183
110	.798	.064
111	-.202	.221
112	-.811	.373
113	1.034	.118
114	-.169	.097
115	.009	.035
116	-.168	.141
117	-.178	.042
118	.612	.205
119	-.013	.164
120	-.046	.185
121	.236	.441
122	-.025	.122
123	-.044	.292
124	.109	.287
125	.633	.272
126	.543	.309
127	.369	.251

MPPs and SDs for the 7-test ASVAB Battery Without NO and CS (First Tier)

Job	MPP	SD
128	-.090	.298
129	-.233	.163
130	.343	.057
131	.731	.042
132	-.087	.318
133	.011	.150
134	-.267	.031
135	-.098	.187
136	1.245	.152
137	.118	.055
138	-.752	.218
139	1.177	.141
140	1.269	.198
141	.451	.183
142	.551	.235
143	1.084	.068
144	-.314	.057
145	-.098	.212
146	.314	.264
147	.512	.196
148	.072	.107
149	-.441	.159
150	-.524	.199

Appendix D1
Computations for Obtaining First Tier Statistical Standard Scores from Operational ASVAB Test Scores, Without Either NO or CS or Both

The actual beta weights used in the simulations are shown in appendix D2. They are not needed for operational computations. The weights, u, and constants, k, for each job family for the first tier are shown in appendix D3. These are the weights to be used in operational computations.

The procedure for transforming the operational ASVAB test scores into the specific standard scores required for use in the black-box first tier system is given below:

(1) Obtain the sum of the products of the nine u weighted ASVAB operational test scores for each composite.

(2) Subtract the constant k for each composite from the sum of the weighted scores obtained in (1) above.

This transformation results in obtaining the modified statistical standard score composite for each soldier for each job family required for use in the first tier black box optimization process.

Appendix D2

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE
1	.03235	.03319	.00907	.09388	.15170	.09350	.04299	.02885
2	.04291	.13077	.05771	.18143	.10713	.07847	.05178	.04745
3	.06480	.08154	-.00605	.16669	.18055	.06083	.04096	.05260
4	.06765	.08348	.01831	.11253	.09203	.08161	.05110	.01681
5	.08423	.07478	.04643	.11289	.14930	.11810	.04697	.03004
6	.08300	.07928	.05281	.17198	.15153	.16841	.01258	-.00706
7	-.09016	.11337	.08415	.36849	.10339	.06561	.01122	.09824
8	.03512	.06354	-.00849	.11484	.13069	.14103	.03567	.04433
9	.03852	-.01398	.14022	.25582	.21025	.13985	.08230	.04105
10	-.01069	.25042	.05620	.04126	.20784	.04480	.07932	.12256
11	.05711	.15537	-.01281	.11716	.16393	.02178	.06515	.10667
12	.02982	.15577	.12898	.09685	.14496	.03787	.02582	.09442
13	.00086	.09083	.03916	.13922	.19158	.07449	.02870	.10697
14	.03072	.16583	.04300	.19990	.05224	.05848	.03237	.08422
15	.09399	.27648	.08581	.32262	-.01189	.06327	-.06941	.06079
16	.12390	.15819	.05503	.14815	.12101	.08643	.02285	.01774
17	.06649	.07678	.09480	.24478	.10127	.17013	.06069	.04058
18	.03105	.18161	-.01369	.17834	.11606	.13209	.10700	-.04607
19	.02724	.13869	.03664	.10049	.12245	.11174	.00551	.11863
20	.04003	.10440	.03544	.14344	.10185	.08690	.10261	.09088
21	.08245	.08856	.01474	.13890	.10167	.12054	.06721	.07680
22	.05431	.16046	.02783	.16105	.06857	.14826	.08360	.05387
23	-.01412	.16616	.03048	.12473	.01110	.09367	.13772	.08342
24	.08988	-.05074	.15915	.13726	.26076	.08321	.15042	.14224
25	-.03074	.19513	.07041	-.01128	.00919	.14299	.07307	.11216
26	.01677	.13061	.15546	.12102	.02216	.13444	-.02499	.31153

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE
27	.00901	.11355	.04055	.13286	.14624	.06452	.13537	.13205
28	.05126	.07921	.01625	.12641	.16249	.10573	.10731	.08000
29	-.02230	.08758	-.00379	.21680	.10098	.10055	.08616	.09237
30	.05952	.18175	.08764	.08670	.21049	.06889	.14466	.05524
31	-.06530	.03288	.11725	.10830	.15716	.00629	.18169	.06874
32	-.04495	.10378	.00628	.13886	.15967	.12393	.16689	.04781
33	.04485	.13481	.04998	.14339	.10471	.08476	.12700	.09711
34	.10539	.19755	.11482	.08709	.18342	.01466	.08244	.17087
35	-.01972	.09694	.03963	.18615	.14747	.04911	.12144	.10258
36	.08506	.26434	.10950	.15056	.12638	.04039	.04886	.06709
37	.18223	.16375	.05562	.00870	.23635	-.05082	.08675	.09343
38	.08850	.11587	.09655	.06591	.18443	.00869	.14989	.21182
39	-.04164	.10876	.15844	.09124	.07218	.05652	.08287	.29019
40	.11389	.02414	-.03174	.18837	.14033	.09280	.08815	.00533
41	.01743	.07274	.07830	.24096	.08808	.06737	.08649	.11644
42	.11237	.04180	.02208	.32978	.14794	.05791	.04601	.15418
43	.14510	.11400	.00571	.13346	.26334	.17343	.18185	-.00142
44	-.02482	.03602	.06771	.36333	.11806	.14719	.00058	.18568
45	.12583	.14423	-.01525	.16410	.07387	.09931	.09169	-.01598
46	.10948	.05047	-.00712	.15478	.12850	.07123	.11430	-.03446
47	-.07264	.24457	.03037	.20797	.11517	.05252	.07316	.13353
48	.13753	.00698	.16329	.14567	.15559	.25572	-.02302	.00274
49	-.06670	-.00811	.05063	.25956	.22240	.06022	.19279	.15319
50	.13902	.31990	.00831	.20239	-.12300	-.03488	.02903	.12798
51	.17149	.04611	.06257	-.00298	.23605	.01117	.06491	.20037
52	.02787	.06455	.02997	.22871	.15861	.13395	.06709	.01379
53	.19210	.03238	.07081	.16961	.11272	.14882	.16548	-.07651

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE
54	-.11278	.04723	.12661	.18972	.04239	.02330	.19353	.05755
55	-.08282	.07753	-.00382	.21431	.27374	.06008	.17797	.03866
56	-.04017	-.08041	.04861	.30972	.31772	-.13256	.18764	.10895
57	.04923	.16759	.11583	.09156	.03316	.05010	.28913	.06689
58	.05446	.20755	.01319	.22349	.16467	.11532	.20209	-.00447
59	.03060	.17503	.08045	.24321	.15156	.15155	.12327	.06001
60	.11901	.13527	.17062	.12665	.09154	-.00019	.09957	.09978
61	.15992	.13332	-.04667	.21445	.03044	.09018	-.06380	.23849
62	.05921	-.03510	.05375	.14904	.05794	.12627	.07131	-.06665
63	.04507	.09625	.04209	.34973	.12824	.12853	.13521	.02328
64	.10025	.13503	-.04381	.23578	.11281	.13002	.06271	.00846
65	.13567	.07087	-.02817	.13362	.12759	.20959	.18036	-.02668
66	.08485	.03875	.00568	.22602	.14164	.15497	.08262	.01534
67	.04771	.08907	-.04270	.40791	.08189	.14966	.14126	-.02081
68	-.02427	.06242	.04179	.45748	.04056	.14631	.08874	.12650
69	.00365	.01817	.00767	.43077	.14525	.08448	.20061	.04397
70	.05112	.13518	.11094	.34662	-.00651	.03626	.15935	.00769
71	-.01546	.11878	.05456	.16618	.08979	.09625	.03923	.13715
72	-.03305	.11189	.09019	.30906	.06498	.12921	.03700	.05067
73	.07850	.06625	.00806	.43185	.08196	.17244	.06872	-.00595
74	-.01980	.05457	.03029	.44110	.07934	.10444	.10746	.10327
75	.01904	.08931	.02350	.40221	.03300	.07651	.12634	.04525
76	.02204	.11483	.02500	.35342	.04836	.18052	.12282	.05304
77	-.01255	.13000	.03028	.44865	.06128	.13876	.10018	.07333
78	-.01558	.09905	.03723	.32156	.17767	.09806	.03497	.16456
79	-.07027	.22262	-.06503	.15956	.05370	.29829	-.02857	.15518
80	-.00981	.09464	.03436	.23712	.16749	.11387	.09284	.13157

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE
81	.07673	.15432	.11083	.21526	.12503	.12570	.09825	.07893
82	-.00777	.09288	.10114	.18485	.05138	.16678	.09179	.06235
83	.00013	.11764	.04764	.24901	.05569	.14981	.15725	.08116
84	.00862	-.05594	-.00725	.05359	.19225	.01556	-.12476	.22026
85	-.00673	.06758	.11796	.21138	.16009	.05420	-.06166	.20509
86	.09607	.16392	.18044	.17869	.12239	.08539	.13292	.04092
87	.09722	.26674	.06481	.06305	.12975	.08490	.11937	.03666
88	.04572	.09535	.12290	.08796	.14204	-.00634	.10664	.12722
89	.11756	-.10847	.06644	.19436	.08711	.15342	.10913	.06276
90	.00453	.09899	.14522	.05623	.22456	.00988	.09759	.22384
91	.01133	.31170	.20474	.03370	.14406	.07259	.01182	.15461
92	-.05420	.18918	.13918	-.01114	.24861	.03477	.07504	.25271
93	.08066	.19452	.18225	-.03038	.12475	-.12082	.10020	.23962
94	-.01620	.21872	.13323	-.04818	.17792	.01018	-.02044	.21950
95	.03235	.11727	.09908	.07750	.13377	.04068	-.06949	.31098
96	-.01445	.05044	.07127	.09476	.21051	.11338	.08348	.04768
97	.01539	.13558	.06098	-.04109	.19042	.04664	.09193	.08033
98	-.01696	.19412	.15376	-.00873	.19860	-.02054	-.02552	.15095
99	.08902	.13884	.09211	-.05301	.29854	-.07282	.04318	.15917
100	.01109	.16372	.15633	-.04396	.11844	-.00861	.09657	.30769
101	-.03958	.23922	.10797	.02461	.24294	.01698	.03320	.15357
102	.03296	.22691	.14018	-.00213	.16227	-.03789	.04428	.15124
103	-.01925	.22300	.11357	.00327	.21176	-.00742	.07866	.09627
104	-.05432	.27853	.13316	.00090	.19786	-.06825	.09587	.22302
105	.03149	.24432	.11258	.10047	.16203	-.06267	-.13182	.17055
106	-.01696	.18853	.16489	.04294	.24098	-.05712	-.00706	.18073
107	-.01450	.21782	.11457	-.06458	.19835	-.00081	.09920	.10925

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE
108	.02206	.15052	.04138	.07446	.08529	.10703	.08807	.09366
109	-.05321	.27539	.08346	.00526	.05307	.11518	.07937	.23796
110	.05802	.15052	.01300	.19419	.13559	.10105	.08447	.04285
111	-.03240	.10286	.05565	.09770	.13228	.18015	.06296	.03600
112	.03295	.14225	.22563	.18648	.05751	-.02219	.00932	-.06911
113	.10779	.13860	.09146	.16679	.27837	.06634	.07918	.01271
114	.00114	.03819	.04443	.19584	.20996	-.01391	.04670	.05720
115	.02171	.11779	.01002	.22863	.04343	.10643	.07571	.06075
116	-.02163	.11229	.12259	.00679	.10219	-.04986	.01243	.14498
117	.05346	.09387	.07036	.11752	.08340	.11213	.05099	.08254
118	.25292	.16345	.01712	-.03731	.16476	.03237	.03535	.06215
119	.04465	.18024	.14293	-.09503	.02465	.02941	.06069	.14019
120	-.14254	.09293	.02570	.10410	.14641	-.01284	-.01794	.06907
121	.20929	.21221	-.00586	.01219	.05956	.17205	.05004	.10719
122	-.05396	.08077	.08650	-.06988	.20969	-.01882	.13302	.00974
123	.04299	.12589	.18405	.02382	.05316	-.05887	.14259	.25713
124	.10110	.20301	.09507	.06845	.24015	.00817	-.00577	.05096
125	.18774	.17514	.09948	-.00168	.11266	.14677	.03825	.05541
126	.13215	.27325	.02289	-.01695	.11465	.09298	.11682	.04686
127	.04943	.13413	.05646	.01601	.08233	.19470	.16756	-.00415
128	-.02119	.15579	.05160	.06558	.18329	-.11394	.03761	.20135
129	.02673	.14287	.00981	-.04041	.01779	.12477	.03478	.20863
130	-.02838	.23774	.05451	.03645	.18831	.08088	-.00697	.11347
131	.06921	.16335	.04937	.17747	.05230	.09456	.08205	.12788
132	.19493	.27819	.11610	.12771	-.08262	.05585	-.01102	.04353
133	.00704	.02204	.09259	.15808	.21492	.10912	.04592	-.05248
134	-.01520	.16725	.06395	.02916	.13710	-.01155	.05105	.12264

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE
135	-.00479	.04381	.12582	.03077	.13817	-.00923	.18070	.24774
136	-.00552	.23033	.13687	.02040	.15601	.10485	.09654	.27622
137	.02142	.10550	.07467	.09793	.13028	.10875	.04796	.14534
138	-.02568	.18661	.09177	.04586	.06803	.10895	.01772	.03852
139	-.00257	.17227	.15148	.08667	.24023	.10901	.00751	.29956
140	.05107	.13689	.09405	.22145	.26306	.12572	-.03394	.17358
141	-.01614	.10069	.11128	.32068	.10343	.08053	.03140	.17671
142	.14250	-.01134	.06364	-.01709	.17559	.09275	.13107	.25952
143	-.03914	.24183	.07031	.06461	.16013	.10577	.05430	.26414
144	.01313	.16672	.05198	.02417	.10087	.05063	.06162	.07400
145	-.03797	.24607	.06102	.08193	.17781	.04028	-.03326	.11344
146	.04347	.14446	.16877	.18766	.19248	.09007	-.03833	.18931
147	.14607	.17956	.12620	.10894	.24861	.01999	-.01173	-.05941
148	.03520	.12479	.15604	.09751	.11482	.10286	.08211	.11327
149	.17665	.12787	.06849	.09666	.01856	.11752	.03004	.11739
150	.02555	.01340	.05900	.13768	.22877	.11811	.10658	-.08663

Appendix D3

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO (150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE	k
1	.00428	.00469	.00131	.01063	.01953	.01108	.00518	.00517	3.25032
2	.00568	.01849	.00831	.02054	.01379	.00930	.00624	.00849	4.78477
3	.00858	.01153	-.00087	.01887	.02324	.00721	.00493	.00942	4.35132
4	.00896	.01180	.00264	.01274	.01185	.00967	.00616	.00301	3.51477
5	.01115	.01057	.00669	.01278	.01922	.01399	.00566	.00538	4.49320
6	.01099	.01121	.00761	.01947	.01951	.01996	.00152	-.00126	4.69071
7	-.01194	.01603	.01212	.04172	.01331	.00777	.00135	.01759	5.18527
8	.00465	.00898	-.00122	.01300	.01683	.01671	.00430	.00794	3.75046
9	.00510	-.00198	.02020	.02896	.02707	.01657	.00992	.00735	5.96682
10	-.00141	.03541	.00810	.00467	.02676	.00531	.00956	.02194	5.78340
11	.00756	.02197	-.00185	.01326	.02110	.00258	.00785	.01909	4.80010
12	.00395	.02202	.01858	.01097	.01866	.00449	.00311	.01690	5.18781
13	.00011	.01284	.00564	.01576	.02466	.00883	.00346	.01915	4.75604
14	.00407	.02345	.00619	.02263	.00672	.00693	.00390	.01508	4.69380
15	.01244	.03909	.01236	.03653	-.00153	.00750	-.00836	.01088	5.75959
16	.01640	.02237	.00793	.01677	.01558	.01024	.00275	.00318	5.00569
17	.00880	.01086	.01366	.02771	.01304	.02016	.00731	.00726	5.74827
18	.00411	.02568	-.00197	.02019	.01494	.01565	.01289	-.00825	4.37899
19	.00361	.01961	.00528	.01138	.01576	.01324	.00066	.02124	4.78314
20	.00530	.01476	.00511	.01624	.01311	.01030	.01236	.01627	4.92002
21	.01092	.01252	.00212	.01573	.01309	.01428	.00810	.01375	4.76726
22	.00719	.02269	.00401	.01823	.00883	.01757	.01007	.00964	5.18200
23	-.00187	.02349	.00439	.01412	.00143	.01110	.01659	.01493	4.44419
24	.01190	-.00717	.02293	.01554	.03357	.00986	.01812	.02546	6.83982
25	-.00407	.02759	.01014	-.00128	.00118	.01694	.00880	.02008	4.19625
26	.00222	.01847	.02240	.01370	.00285	.01593	-.00301	.05577	6.79463

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO (150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE	k
27	.00119	.01605	.00584	.01504	.01883	.00765	.01631	.02364	5.49687
28	.00679	.01120	.00234	.01431	.02092	.01253	.01293	.01432	5.01085
29	-.00295	.01238	-.00055	.02455	.01300	.01191	.01038	.01654	4.49962
30	.00788	.02570	.01262	.00982	.02710	.00816	.01743	.00989	6.21782
31	-.00865	.00465	.01689	.01226	.02023	.00074	.02189	.01231	4.21708
32	-.00595	.01467	.00090	.01572	.02056	.01468	.02011	.00856	4.69500
33	.00594	.01906	.00720	.01623	.01348	.01004	.01530	.01738	5.50713
34	.01395	.02793	.01654	.00986	.02361	.00174	.00993	.03059	7.03939
35	-.00261	.01371	.00571	.02107	.01898	.00582	.01463	.01836	5.03292
36	.01126	.03737	.01577	.01705	.01627	.00479	.00589	.01201	6.32749
37	.02413	.02315	.00801	.00098	.03043	-.00602	.01045	.01673	5.62351
38	.01172	.01638	.01391	.00746	.02374	.00103	.01806	.03792	6.83112
39	-.00551	.01538	.02282	.01033	.00929	.00670	.00998	.05195	6.38492
40	.01508	.00341	-.00457	.02133	.01807	.01100	.01062	.00095	3.98547
41	.00231	.01028	.01128	.02728	.01134	.00798	.01042	.02084	5.36894
42	.01488	.00591	.00318	.03734	.01905	.00686	.00554	.02760	6.34101
43	.01921	.01612	.00082	.01511	.03390	.02055	.02191	-.00025	6.67729
44	-.00329	.00509	.00975	.04114	.01520	.01744	.00007	.03324	6.28436
45	.01666	.02039	-.00220	.01858	.00951	.01177	.01105	-.00286	4.35816
46	.01450	.00714	-.00103	.01752	.01654	.00844	.01377	-.00617	3.70747
47	-.00962	.03458	.00438	.02355	.01483	.00622	.00881	.02390	5.61917
48	.01821	.00099	.02352	.01649	.02003	.03030	-.00277	.00049	5.66793
49	-.00883	-.00115	.00729	.02939	.02863	.00714	.02323	.02742	5.95266
50	.01841	.04523	.00120	.02291	-.01584	-.00413	.00350	.02291	4.96856
51	.02271	.00652	.00901	-.00034	.03039	.00132	.00782	.03587	5.92821
52	.00369	.00913	.00432	.02589	.02042	.01587	.00808	.00247	4.73621
53	.02543	.00458	.01020	.01920	.01451	.01763	.01994	-.01370	5.14121

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO (150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE	k
54	-.01493	.00668	.01824	.02148	.00546	.00276	.02331	.01030	3.87275
55	-.01097	.01096	-.00055	.02426	.03524	.00712	.02144	.00692	4.95020
56	-.00532	-.01137	.00700	.03507	.04090	-.01571	.02261	.01950	4.84037
57	.00652	.02369	.01669	.01037	.00427	.00594	.03483	.01197	6.00845
58	.00721	.02934	.00190	.02530	.02120	.01366	.02435	-.00080	6.41768
59	.00405	.02475	.01159	.02754	.01951	.01796	.01485	.01074	6.90253
60	.01576	.01912	.02458	.01434	.01178	-.00002	.01200	.01786	6.06641
61	.02117	.01885	-.00672	.02428	.00392	.01069	-.00769	.04269	5.66073
62	.00784	-.00496	.00774	.01687	.00746	.01496	.00859	-.01193	2.46346
63	.00597	.01361	.00606	.03960	.01651	.01523	.01629	.00417	6.19375
64	.01327	.01909	-.00631	.02669	.01452	.01541	.00756	.00151	4.83051
65	.01796	.01002	-.00406	.01513	.01643	.02484	.02173	-.00478	5.11580
66	.01123	.00548	.00082	.02559	.01823	.01836	.00995	.00275	4.87038
67	.00632	.01259	-.00615	.04618	.01054	.01773	.01702	-.00373	5.30981
68	-.00321	.00882	.00602	.05179	.00522	.01734	.01069	.02264	6.32742
69	.00048	.00257	.00110	.04877	.01870	.01001	.02417	.00787	5.99439
70	.00677	.01911	.01598	.03924	-.00084	.00430	.01920	.00138	5.55270
71	-.00205	.01679	.00786	.01881	.01156	.01140	.00473	.02455	4.94534
72	-.00438	.01582	.01299	.03499	.00837	.01531	.00446	.00907	5.11840
73	.01039	.00937	.00116	.04889	.01055	.02043	.00828	-.00107	5.71489
74	-.00262	.00772	.00436	.04994	.01021	.01238	.01295	.01849	6.00230
75	.00252	.01263	.00339	.04554	.00425	.00907	.01522	.00810	5.32560
76	.00292	.01624	.00360	.04001	.00623	.02139	.01480	.00950	6.06905
77	-.00166	.01838	.00436	.05079	.00789	.01644	.01207	.01313	6.42612
78	-.00206	.01400	.00536	.03641	.02287	.01162	.00421	.02946	6.42993
79	-.00930	.03148	-.00937	.01807	.00691	.03534	-.00344	.02778	5.17554
80	-.00130	.01338	.00495	.02685	.02156	.01349	.01119	.02355	5.99116

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO (150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE	k
81	.01016	.02182	.01597	.02437	.01610	.01490	.01184	.01413	6.81213
82	-.00103	.01313	.01457	.02093	.00661	.01976	.01106	.01116	5.09137
83	.00002	.01663	.00686	.02819	.00717	.01775	.01894	.01453	5.81808
84	.00114	-.00791	-.00104	.00607	.02475	.00184	-.01503	.03943	2.58815
85	-.00089	.00955	.01699	.02393	.02061	.00642	-.00743	.03672	5.58985
86	.01272	.02318	.02599	.02023	.01576	.01012	.01601	.00733	6.91145
87	.01287	.03771	.00934	.00714	.01670	.01006	.01438	.00656	6.02217
88	.00605	.01348	.01770	.00996	.01829	-.00075	.01285	.02277	5.26763
89	.01556	-.01534	.00957	.02201	.01121	.01818	.01315	.01123	4.52201
90	.00060	.01400	.02092	.00637	.02891	.00117	.01176	.04007	6.49823
91	.00150	.04407	.02949	.00382	.01855	.00860	.00142	.02768	7.11018
92	-.00718	.02675	.02005	-.00126	.03201	.00412	.00904	.04524	6.75863
93	.01068	.02750	.02625	-.00344	.01606	-.01432	.01207	.04290	6.16323
94	-.00214	.03092	.01919	-.00546	.02291	.00121	-.00246	.03929	5.43053
95	.00428	.01658	.01427	.00877	.01722	.00482	-.00837	.05567	5.96936
96	-.00191	.00713	.01027	.01073	.02710	.01343	.01006	.00854	4.48500
97	.00204	.01917	.00879	-.00465	.02451	.00553	.01107	.01438	4.22843
98	-.00225	.02745	.02215	-.00099	.02557	-.00243	-.00307	.02702	4.89823
99	.01179	.01963	.01327	-.00600	.03843	-.00863	.00520	.02849	5.32316
100	.00147	.02315	.02252	-.00498	.01525	-.00102	.01163	.05508	6.46944
101	-.00524	.03382	.01555	.00279	.03128	.00201	.00400	.02749	5.85506
102	.00436	.03208	.02019	-.00024	.02089	-.00449	.00533	.02708	5.51202
103	-.00255	.03153	.01636	.00037	.02726	-.00088	.00948	.01723	5.17053
104	-.00719	.03938	.01918	.00010	.02547	-.00809	.01155	.03992	6.30353
105	.00417	.03454	.01622	.01137	.02086	-.00743	-.01588	.03053	4.95419
106	-.00225	.02666	.02375	.00486	.03102	-.00677	-.00085	.03235	5.69928
107	-.00192	.03080	.01651	-.00731	.02553	-.00010	.01195	.01956	4.96877

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO (150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE	k
108	.00292	.02128	.00596	.00843	.01098	.01268	.01061	.01677	4.72050
109	-.00705	.03894	.01202	.00060	.00683	.01365	.00956	.04260	6.17980
110	.00768	.02128	.00187	.02199	.01746	.01197	.01018	.00767	5.26588
111	-.00429	.01454	.00802	.01106	.01703	.02135	.00758	.00644	4.31437
112	.00436	.02011	.03250	.02111	.00740	-.00263	.00112	-.01237	3.77207
113	.01427	.01960	.01318	.01888	.03584	.00786	.00954	.00228	6.36295
114	.00015	.00540	.00640	.02217	.02703	-.00165	.00563	.01024	3.95046
115	.00287	.01665	.00144	.02588	.00559	.01261	.00912	.01088	4.49444
116	-.00286	.01588	.01766	.00077	.01316	-.00591	.00150	.02595	3.47061
117	.00708	.01327	.01014	.01331	.01074	.01329	.00614	.01478	4.67979
118	.03349	.02311	.00247	-.00422	.02121	.00384	.00426	.01113	4.97351
119	.00591	.02548	.02059	-.01076	.00317	.00348	.00731	.02510	4.22177
120	-.01887	.01314	.00370	.01179	.01885	-.00152	-.00216	.01237	1.95916
121	.02771	.03000	-.00084	.00138	.00767	.02039	.00603	.01919	5.86676
122	-.00714	.01142	.01246	-.00791	.02699	-.00223	.01603	.00174	2.66591
123	.00569	.01780	.02651	.00270	.00684	-.00698	.01718	.04603	6.08661
124	.01339	.02870	.01370	.00775	.03092	.00097	-.00069	.00912	5.43259
125	.02486	.02476	.01433	-.00019	.01450	.01739	.00461	.00992	5.79080
126	.01750	.03863	.00330	-.00192	.01476	.01102	.01407	.00839	5.54124
127	.00654	.01896	.00813	.00181	.01060	.02307	.02019	-.00074	4.66380
128	-.00281	.02203	.00743	.00742	.02360	-.01350	.00453	.03605	4.43069
129	.00354	.02020	.00141	-.00457	.00229	.01478	.00419	.03735	4.18114
130	-.00376	.03361	.00785	.00413	.02424	.00958	-.00084	.02031	4.99693
131	.00916	.02310	.00711	.02009	.00673	.01121	.00989	.02289	5.81045
132	.02581	.03933	.01673	.01446	-.01064	.00662	-.00133	.00779	5.21285
133	.00093	.00312	.01334	.01790	.02767	.01293	.00553	-.00940	3.78473
134	-.00201	.02365	.00921	.00330	.01765	-.00137	.00615	.02195	4.11672

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO (150 Job Families)

Job Family	GS	AR	CS	AS	MK	MC	EI	VE	k
135	-.00063	.00619	.01812	.00348	.01779	-.00109	.02177	.04435	5.77737
136	-.00073	.03257	.01972	.00231	.02008	.01242	.01163	.04945	7.76169
137	.00284	.01492	.01076	.01109	.01677	.01289	.00578	.02602	5.32455
138	-.00340	.02638	.01322	.00519	.00876	.01291	.00214	.00690	3.80405
139	-.00034	.02436	.02182	.00981	.03093	.01292	.00090	.05363	8.10905
140	.00676	.01935	.01355	.02507	.03387	.01490	-.00409	.03107	7.39580
141	-.00214	.01424	.01603	.03631	.01332	.00954	.00378	.03163	6.48626
142	.01887	-.00160	.00917	-.00194	.02260	.01099	.01579	.04646	6.31980
143	-.00518	.03419	.01013	.00732	.02061	.01253	.00654	.04728	7.02637
144	.00174	.02357	.00749	.00274	.01299	.00600	.00742	.01325	3.94853
145	-.00503	.03479	.00879	.00928	.02289	.00477	-.00401	.02031	4.82238
146	.00576	.02042	.02431	.02125	.02478	.01067	-.00462	.03389	7.19179
147	.01934	.02539	.01818	.01233	.03201	.00237	-.00141	-.01064	5.09986
148	.00466	.01764	.02248	.01104	.01478	.01219	.00989	.02028	5.95222
149	.02339	.01808	.00987	.01094	.00239	.01393	.00362	.02102	5.44420
150	.00338	.00189	.00850	.01559	.02945	.01399	.01284	-.01551	3.67671

Appendix D4

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE
1	.03371	.02934	.02649	.09579	.14533	.09565	.04471	.03089
2	.03879	.13102	.03775	.17878	.10561	.08138	.05234	.05609
3	.06458	.08277	-.01060	.16621	.18269	.05998	.04038	.05148
4	.06689	.08250	.01758	.11232	.08988	.08300	.05173	.01974
5	.08112	.07456	.03257	.11100	.14742	.12062	.04759	.03706
6	.07560	.08655	-.00261	.16536	.16123	.16800	.01015	-.00038
7	-.09623	.11385	.05446	.36456	.10136	.06980	.01199	.11082
8	.03471	.06548	-.01600	.11405	.13403	.13974	.03476	.04272
9	.03145	-.01907	.12185	.25277	.19759	.14940	.08605	.06303
10	-.01508	.25139	.03292	.03824	.20751	.04731	.07956	.13084
11	.05975	.15197	.00930	.11974	.15899	.02259	.06642	.10533
12	.01374	.16963	.01416	.08301	.16253	.03857	.02151	.11141
13	.00016	.08694	.04705	.13984	.18416	.07823	.03077	.11354
14	.04218	.13789	.17669	.21469	.00679	.07291	.04455	.09554
15	.08301	.28623	.00658	.31309	.00064	.06350	-.07250	.07201
16	.12305	.15246	.06753	.14918	.11016	.09180	.02588	.02701
17	.05927	.07805	.05748	.23991	.10014	.17453	.06125	.05462
18	.02710	.19110	-.05940	.17328	.13147	.12724	.10288	-.04978
19	.02473	.13863	.02511	.09894	.12115	.11368	.00596	.12415
20	.03428	.11078	-.00971	.13810	.11073	.08597	.10035	.09510
21	.08063	.09010	.00180	.13734	.10362	.12063	.06674	.07874
22	.05006	.16495	-.00490	.15717	.07473	.14775	.08204	.05727
23	-.01725	.16814	.01018	.12223	.01321	.09440	.13724	.08766
24	.07718	-.04748	.09054	.12842	.26063	.09011	.15090	.16562
25	-.03145	.18706	.09030	-.00952	-.00586	.15018	.07726	.12416
26	.00468	.13318	.09165	.11274	.02108	.14144	-.02427	.33446

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE
27	.00410	.11762	.00593	.12867	.15132	.06486	.13414	.13744
28	.04872	.08194	-.00342	.12407	.16626	.10539	.10635	.08197
29	-.02524	.09378	-.03530	.21327	.11087	.09765	.08353	.09073
30	.05447	.17978	.06975	.08408	.20448	.07433	.14650	.06877
31	-.07666	.03916	.04622	.09947	.16317	.00968	.18041	.08528
32	-.04383	.10079	.02005	.14037	.15476	.12556	.16821	.04928
33	.04321	.13129	.05242	.14332	.09751	.08890	.12905	.10524
34	.09744	.19756	.07767	.08211	.17965	.02066	.08375	.18814
35	-.02636	.10450	-.01306	.17993	.15805	.04788	.11874	.10723
36	.07280	.27338	.02636	.14043	.13702	.04217	.04634	.08199
37	.17425	.17175	-.00459	.00152	.24711	-.05140	.08405	.10041
38	.08186	.11578	.06587	.06178	.18109	.01378	.15104	.22636
39	-.05320	.10990	.10129	.08369	.06872	.06431	.08423	.31383
40	.11517	.02591	-.03087	.18869	.14418	.09037	.08704	.00025
41	.01093	.07483	.04195	.23632	.08879	.07055	.08652	.12786
42	.10642	.05035	-.03022	.32373	.16069	.05534	.04269	.15602
43	.14670	.11012	.02434	.13553	.25704	.17542	.18354	.00011
44	-.03721	.05093	-.03291	.35151	.13932	.14423	-.00487	.19328
45	.12069	.15621	-.07361	.15762	.09325	.09329	.08651	-.02036
46	.10915	.05208	-.01332	.15413	.13127	.07016	.11354	-.03581
47	-.07412	.24336	.02695	.20738	.11227	.05464	.07402	.13831
48	.11422	.03022	-.01220	.12474	.18681	.25412	-.03086	.02327
49	-.06662	-.01504	.07087	.26150	.20981	.06589	.19627	.16201
50	.12945	.33730	-.08630	.19166	-.09586	-.04203	.02185	.12620
51	.15972	.06050	-.03362	-.01427	.25665	.00816	.05962	.20729
52	.02941	.05755	.05724	.23158	.14659	.13857	.07036	.01951
53	.18307	.04036	.00580	.16178	.12295	.14904	.16297	-.06725

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE
54	-.11953	.04333	.10632	.18655	.03206	.03162	.19662	.07727
55	-.08313	.07865	-.00850	.21380	.27563	.05940	.17746	.03790
56	-.05043	-.06707	-.03755	.29966	.33714	-.13583	.18262	.11394
57	.03934	.17122	.05921	.08438	.03506	.05457	.28894	.08369
58	.05286	.20889	.00185	.22212	.16635	.11543	.20168	-.00272
59	.02460	.17586	.05006	.23922	.15021	.15539	.12384	.07197
60	.10478	.13995	.09075	.11646	.09328	.00668	.09957	.12463
61	.16863	.12273	.02437	.22279	.01528	.09236	-.05990	.23331
62	.05077	-.02597	-.01183	.14127	.07054	.12510	.06811	-.06015
63	.04200	.09656	.02685	.34772	.12734	.13060	.13556	.02956
64	.10042	.14056	-.05888	.23438	.12297	.12532	.05990	.00091
65	.13540	.07516	-.04172	.13229	.13528	.20625	.17824	-.03166
66	.08564	.03645	.01599	.22714	.13783	.15627	.08364	.01660
67	.04857	.09312	-.05032	.40734	.08969	.14566	.13908	-.02794
68	-.02940	.06676	.00538	.45308	.04602	.14660	.08741	.13203
69	.00419	.01609	.01616	.43167	.14172	.08579	.20157	.04549
70	.04548	.13122	.09598	.34417	-.01641	.04378	.16228	.02506
71	-.02304	.12615	-.00199	.15942	.09960	.09588	.03678	.14407
72	-.03660	.10667	.08861	.30826	.05378	.13619	.04022	.06514
73	.07915	.06392	.01776	.43289	.07802	.17388	.06978	-.00433
74	-.02385	.05834	.00060	.43754	.08428	.10438	.10623	.10718
75	.01603	.09199	.00176	.39960	.03644	.07657	.12549	.04832
76	.01734	.12057	-.01337	.34892	.05657	.17933	.12071	.05581
77	-.01663	.13384	.00022	.44505	.06632	.13867	.09892	.07722
78	-.01571	.09431	.05021	.32277	.16898	.10207	.03737	.17099
79	-.05341	.19871	.08224	.17663	.01819	.30531	-.01932	.14955
80	-.01470	.09950	-.00241	.23273	.17401	.11355	.09121	.13589

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE
81	.07139	.14981	.09890	.21315	.11425	.13347	.10142	.09639
82	-.01577	.09481	.05829	.17932	.05108	.17123	.09215	.07723
83	-.00402	.11930	.02350	.24595	.05673	.15157	.15711	.08804
84	.01360	-.06461	.04090	.05908	.17883	.01896	-.12122	.22067
85	-.01821	.07399	.04602	.20245	.16628	.05757	-.06298	.22173
86	.08206	.16686	.10667	.16912	.12105	.09354	.13377	.06755
87	.08455	.28258	-.03976	.05080	.15256	.08138	.11349	.04366
88	.03670	.09633	.07799	.08204	.13953	-.00035	.10765	.14553
89	.11988	-.12186	.11570	.19946	.06382	.16273	.11550	.07508
90	-.00759	.10299	.07722	.04756	.22605	.01572	.09760	.24499
91	-.00477	.31543	.11890	.02260	.14317	.08166	.01262	.18476
92	-.07038	.20184	.02737	-.02471	.26395	.03652	.07135	.27144
93	.06619	.19811	.10441	-.04042	.12439	-.11286	.10080	.26641
94	-.02686	.22149	.07555	-.05561	.17789	.01593	-.02007	.23906
95	.01849	.13083	-.00450	.06513	.15185	.03995	-.07401	.32353
96	-.02291	.05727	.01221	.08760	.21890	.11413	.08145	.05722
97	.01051	.13687	.03451	-.04449	.19042	.04927	.09209	.08928
98	-.02173	.18275	.16415	-.00862	.17560	-.00755	-.01899	.17605
99	.08747	.12950	.11167	-.05143	.28079	-.06394	.04814	.17465
100	-.00464	.17323	.05563	-.05640	.12825	-.00459	.09440	.32956
101	-.04987	.24467	.04431	.01669	.24795	.02024	.03217	.16886
102	.02478	.22398	.11041	-.00645	.15300	-.02929	.04712	.17284
103	-.02844	.22557	.06334	-.00318	.21205	-.00261	.07890	.11291
104	-.06572	.28275	.06784	-.00739	.20011	-.06313	.09564	.24232
105	.02203	.24753	.05923	.09367	.16338	-.05819	-.13186	.18692
106	-.03251	.19654	.06931	.03102	.24815	-.05200	-.00851	.20414
107	-.01923	.21162	.11029	-.06585	.18480	.00787	.10311	.12756

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE
108	.01970	.14954	.03319	.07325	.08237	.10962	.08896	.10005
109	-.05324	.26427	.11524	.00827	.03278	.12439	.08498	.25244
110	.05680	.15114	.00552	.19326	.13614	.10146	.08436	.04469
111	-.03329	.09713	.06794	.09870	.12141	.18556	.06599	.04537
112	.01725	.14241	.15191	.17661	.05030	-.01047	.01185	-.03520
113	.10054	.14038	.05254	.16176	.27815	.07034	.07949	.02616
114	-.00079	.03596	.04187	.19524	.20498	-.01061	.04814	.06427
115	.01856	.12255	-.01834	.22536	.05060	.10488	.07384	.06143
116	-.02879	.10972	.09656	.00301	.09409	-.04234	.01492	.16387
117	.04457	.10166	.00651	.10983	.09335	.11241	.04855	.09177
118	.25330	.16040	.02765	-.03624	.15941	.03459	.03682	.06525
119	.02435	.20038	-.00962	-.11323	.05166	.02810	.05392	.15819
120	-.14504	.09433	.01000	.10215	.14777	-.01211	-.01823	.07270
121	.21443	.20304	.04446	.01791	.04531	.17574	.05381	.10790
122	-.06131	.08341	.04461	-.07520	.21099	-.01545	.13291	.02229
123	.02425	.13750	.06328	.00892	.06537	-.05432	.13986	.28280
124	.09741	.19742	.09384	.06766	.22821	.01558	-.00234	.06623
125	.17709	.18242	.02891	-.01033	.12084	.14880	.03635	.06911
126	.12894	.27640	-.00115	-.01982	.11885	.09280	.11577	.04976
127	.04782	.12968	.06175	.01622	.07344	.19960	.17007	.00512
128	-.02786	.16178	.00330	.05977	.19102	-.11386	.03570	.20808
129	.02507	.14478	-.00340	-.04197	.02046	.12445	.03410	.20977
130	-.03398	.24126	.01832	.03199	.19205	.08219	-.00781	.12106
131	.06648	.16200	.04053	.17613	.04854	.09773	.08318	.13554
132	.18475	.28235	.05664	.12020	-.07990	.06011	-.01142	.06027
133	-.00329	.02962	.02263	.14954	.22380	.11065	.04382	-.03987
134	-.01978	.16754	.04178	.02622	.13544	-.00834	.05167	.13221

Eight-Test, First-Tier Composite Beta Weights for ASVAB Tests Without CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE
135	-.01421	.04519	.07789	.02449	.13618	-.00326	.18158	.26643
136	-.01889	.23786	.05288	.00998	.16335	.10872	.09497	.29550
137	.01375	.11033	.02501	.09181	.13544	.11054	.04680	.15573
138	-.02301	.16916	.15429	.05228	.03750	.12135	.02607	.05536
139	-.01397	.17405	.09314	.07904	.23803	.11614	.00851	.32203
140	.04926	.12778	.11179	.22281	.24560	.13461	-.02905	.18931
141	-.02552	.10395	.05815	.31392	.10488	.08492	.03132	.19288
142	.13801	-.01118	.04225	-.01994	.17373	.09601	.13174	.26907
143	-.05151	.25634	-.02903	.05292	.18067	.10312	.04904	.27220
144	.00970	.16638	.03699	.02212	.09861	.05350	.06236	.08187
145	-.04063	.24305	.05725	.08109	.17104	.04478	-.03129	.12315
146	.02529	.15703	.04786	.17285	.20671	.09341	-.04164	.21251
147	.13516	.18376	.06323	.10097	.25106	.02475	-.01204	-.04116
148	.02821	.11743	.14452	.09514	.09806	.11423	.08699	.13802
149	.15791	.15496	-.09670	.07755	.05898	.10929	.01951	.12299
150	.02227	.01184	.04820	.13605	.22435	.12187	.10791	-.07749

Appendix D5

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without CS (150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE	k
1	.00446	.00415	.00409	.01084	.01871	.01133	.00539	.00553	3.39601
2	.00514	.01852	.00583	.02024	.01360	.00964	.00631	.01004	4.71065
3	.00855	.01170	-.00164	.01882	.02352	.00711	.00486	.00921	4.30822
4	.00886	.01166	.00271	.01272	.01157	.00983	.00623	.00353	3.53411
5	.01074	.01054	.00503	.01257	.01898	.01429	.00573	.00663	4.45040
6	.01001	.01224	-.00040	.01872	.02076	.01991	.00122	-.00007	4.33846
7	-.01274	.01610	.00841	.04127	.01305	.00827	.00144	.01984	5.07265
8	.00460	.00926	-.00247	.01291	.01726	.01656	.00419	.00765	3.68140
9	.00416	-.00270	.01882	.02862	.02544	.01770	.01037	.01128	6.01723
10	-.00200	.03554	.00508	.00433	.02671	.00561	.00958	.02342	5.68179
11	.00791	.02149	.00144	.01356	.02047	.00268	.00800	.01886	4.95192
12	.00182	.02398	.00219	.00940	.02092	.00457	.00259	.01994	4.48468
13	.00002	.01229	.00727	.01583	.02371	.00927	.00371	.02032	4.86983
14	.00558	.01950	.02728	.02431	.00087	.00864	.00537	.01710	5.77571
15	.01099	.04047	.00102	.03545	.00008	.00752	-.00873	.01289	5.27007
16	.01629	.02156	.01043	.01689	.01418	.01088	.00312	.00484	5.17634
17	.00785	.01104	.00888	.02716	.01289	.02068	.00738	.00978	5.59178
18	.00359	.02702	-.00917	.01962	.01692	.01508	.01239	-.00891	4.01046
19	.00327	.01960	.00388	.01120	.01560	.01347	.00072	.02222	4.74481
20	.00454	.01566	-.00150	.01563	.01426	.01019	.01209	.01702	4.62265
21	.01068	.01274	.00028	.01555	.01334	.01429	.00804	.01410	4.68831
22	.00663	.02332	-.00076	.01779	.00962	.01751	.00988	.01025	4.96945
23	-.00228	.02377	.00157	.01384	.00170	.01119	.01653	.01569	4.33037
24	.01022	-.00671	.01398	.01454	.03355	.01068	.01818	.02965	6.53145
25	-.00416	.02645	.01394	-.00108	-.00075	.01780	.00931	.02223	4.44444
26	.00062	.01883	.01415	.01276	.00271	.01676	-.00292	.05987	6.51796

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without CS (150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE	k
27	.00054	.01663	.00092	.01457	.01948	.00769	.01616	.02460	5.28709
28	.00645	.01159	-.00053	.01405	.02140	.01249	.01281	.01467	4.88237
29	-.00334	.01326	-.00545	.02415	.01427	.01157	.01006	.01624	4.25326
30	.00721	.02542	.01077	.00952	.02632	.00881	.01765	.01231	6.20032
31	-.01015	.00554	.00714	.01126	.02101	.00115	.02174	.01527	3.83315
32	-.00580	.01425	.00310	.01589	.01992	.01488	.02027	.00882	4.80892
33	.00572	.01856	.00810	.01623	.01255	.01053	.01555	.01884	5.59391
34	.01290	.02793	.01199	.00930	.02313	.00245	.01009	.03368	6.91149
35	-.00349	.01477	-.00202	.02037	.02035	.00567	.01431	.01920	4.68361
36	.00964	.03865	.00407	.01590	.01764	.00500	.00558	.01468	5.84031
37	.02307	.02428	-.00071	.00017	.03181	-.00609	.01013	.01797	5.23839
38	.01084	.01637	.01017	.00699	.02331	.00163	.01820	.04052	6.72778
39	-.00704	.01554	.01564	.00948	.00885	.00762	.01015	.05618	6.16331
40	.01525	.00366	-.00477	.02136	.01856	.01071	.01049	.00004	3.94891
41	.00145	.01058	.00648	.02676	.01143	.00836	.01042	.02289	5.19738
42	.01409	.00712	-.00467	.03665	.02069	.00656	.00514	.02793	5.97076
43	.01942	.01557	.00376	.01534	.03309	.02079	.02211	.00002	6.82767
44	-.00493	.00720	-.00508	.03980	.01794	.01709	-.00059	.03460	5.60639
45	.01598	.02209	-.01137	.01785	.01200	.01105	.01042	-.00364	3.89072
46	.01445	.00736	-.00206	.01745	.01690	.00831	.01368	-.00641	3.65037
47	-.00981	.03441	.00416	.02348	.01445	.00647	.00892	.02476	5.63431
48	.01512	.00427	-.00188	.01412	.02405	.03011	-.00372	.00416	4.54709
49	-.00882	-.00213	.01094	.02961	.02701	.00781	.02365	.02900	6.17660
50	.01714	.04769	-.01333	.02170	-.01234	-.00498	.00263	.02259	4.25571
51	.02115	.00855	-.00519	-.00162	.03304	.00097	.00718	.03711	5.27713
52	.00389	.00814	.00884	.02622	.01887	.01642	.00848	.00349	4.98577
53	.02424	.00571	.00090	.01832	.01583	.01766	.01963	-.01204	4.74009

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without CS (150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE	k
54	-.01583	.00613	.01642	.02112	.00413	.00375	.02369	.01383	3.88994
55	-.01101	.01112	-.00131	.02421	.03548	.00704	.02138	.00678	4.90920
56	-.00668	-.00948	-.00580	.03393	.04340	-.01610	.02200	.02040	4.24712
57	.00521	.02421	.00914	.00955	.00451	.00647	.03481	.01498	5.73290
58	.00700	.02953	.00029	.02515	.02142	.01368	.02430	-.00049	6.34885
59	.00326	.02486	.00773	.02708	.01934	.01841	.01492	.01288	6.77952
60	.01387	.01979	.01401	.01318	.01201	.00079	.01200	.02231	5.68755
61	.02233	.01735	.00376	.02522	.00197	.01094	-.00722	.04177	6.14094
62	.00672	-.00367	-.00183	.01599	.00908	.01482	.00821	-.01077	2.03474
63	.00556	.01365	.00415	.03937	.01639	.01547	.01633	.00529	6.13450
64	.01330	.01987	-.00909	.02654	.01583	.01485	.00722	.00016	4.65551
65	.01793	.01063	-.00644	.01498	.01742	.02444	.02147	-.00567	4.97366
66	.01134	.00515	.00247	.02572	.01774	.01852	.01008	.00297	4.95701
67	.00643	.01317	-.00777	.04612	.01155	.01726	.01676	-.00500	5.19332
68	-.00389	.00944	.00083	.05130	.00592	.01737	.01053	.02364	6.10566
69	.00056	.00227	.00250	.04887	.01825	.01016	.02428	.00814	6.06988
70	.00602	.01855	.01482	.03897	-.00211	.00519	.01955	.00449	5.58936
71	-.00305	.01784	-.00031	.01805	.01282	.01136	.00443	.02579	4.58685
72	-.00485	.01508	.01368	.03490	.00692	.01614	.00485	.01166	5.22919
73	.01048	.00904	.00274	.04901	.01004	.02060	.00841	-.00078	5.80014
74	-.00316	.00825	.00009	.04954	.01085	.01237	.01280	.01919	5.81632
75	.00212	.01301	.00027	.04524	.00469	.00907	.01512	.00865	5.19122
76	.00230	.01705	-.00207	.03950	.00728	.02125	.01454	.00999	5.80936
77	-.00220	.01892	.00003	.05039	.00854	.01643	.01192	.01382	6.23731
78	-.00208	.01333	.00775	.03654	.02175	.01209	.00450	.03061	6.58003
79	-.00707	.02810	.01270	.02000	.00234	.03618	-.00233	.02677	6.21416
80	-.00195	.01407	-.00037	.02635	.02240	.01345	.01099	.02433	5.75656

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without CS (150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE	k
81	.00945	.02118	.01527	.02413	.01471	.01581	.01222	.01726	6.87183
82	-.00209	.01341	.00900	.02030	.00658	.02029	.01110	.01383	4.90117
83	-.00053	.01687	.00363	.02785	.00730	.01796	.01893	.01576	5.69817
84	.00180	-.00914	.00632	.00669	.02302	.00225	-.01460	.03950	2.94685
85	-.00241	.01046	.00711	.02292	.02141	.00682	-.00759	.03969	5.19992
86	.01086	.02359	.01647	.01915	.01558	.01108	.01612	.01209	6.59261
87	.01120	.03995	-.00614	.00575	.01964	.00964	.01367	.00782	5.31002
88	.00486	.01362	.01204	.00929	.01796	-.00004	.01297	.02605	5.09134
89	.01587	-.01723	.01787	.02258	.00822	.01928	.01391	.01344	4.98958
90	-.00100	.01456	.01192	.00538	.02910	.00186	.01176	.04386	6.17563
91	-.00063	.04460	.01836	.00256	.01843	.00968	.00152	.03308	6.73213
92	-.00932	.02854	.00423	-.00280	.03398	.00433	.00860	.04859	6.09246
93	.00876	.02801	.01612	-.00458	.01601	-.01337	.01214	.04769	5.81574
94	-.00356	.03132	.01167	-.00630	.02290	.00189	-.00242	.04280	5.17053
95	.00245	.01850	-.00070	.00737	.01955	.00473	-.00892	.05792	5.31150
96	-.00303	.00810	.00189	.00992	.02818	.01352	.00981	.01024	4.13002
97	.00139	.01935	.00533	-.00504	.02451	.00584	.01109	.01598	4.10885
98	-.00288	.02584	.02535	-.00098	.02261	-.00089	-.00229	.03152	5.18730
99	.01158	.01831	.01724	-.00582	.03615	-.00758	.00580	.03126	5.59842
100	-.00061	.02449	.00859	-.00639	.01651	-.00054	.01137	.05900	5.91165
101	-.00660	.03459	.00684	.00189	.03192	.00240	.00388	.03023	5.51491
102	.00328	.03167	.01705	-.00073	.01970	-.00347	.00568	.03094	5.47515
103	-.00377	.03189	.00978	-.00036	.02730	-.00031	.00951	.02021	4.94078
104	-.00870	.03998	.01048	-.00084	.02576	-.00748	.01152	.04338	5.98499
105	.00292	.03500	.00915	.01061	.02103	-.00690	-.01589	.03346	4.69920
106	-.00430	.02779	.01070	.00351	.03195	-.00616	-.00102	.03654	5.19233
107	-.00255	.02992	.01703	-.00746	.02379	.00093	.01242	.02284	5.09207

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without CS (150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE	k
108	.00261	.02114	.00512	.00829	.01060	.01299	.01072	.01791	4.71420
109	-.00705	.03736	.01780	.00094	.00422	.01474	.01024	.04519	6.53676
110	.00752	.02137	.00085	.02188	.01753	.01202	.01016	.00800	5.22635
111	-.00441	.01373	.01049	.01117	.01563	.02199	.00795	.00812	4.48431
112	.00228	.02014	.02346	.01999	.00648	-.00124	.00143	-.00630	3.51525
113	.01331	.01985	.00811	.01831	.03581	.00834	.00958	.00468	6.18963
114	-.00010	.00508	.00646	.02211	.02639	-.00126	.00580	.01151	3.99135
115	.00246	.01733	-.00283	.02551	.00651	.01243	.00890	.01100	4.29096
116	-.00381	.01551	.01491	.00034	.01211	-.00502	.00180	.02933	3.43840
117	.00590	.01437	.00101	.01243	.01202	.01332	.00585	.01643	4.28692
118	.03354	.02268	.00427	-.00410	.02052	.00410	.00444	.01168	5.07745
119	.00322	.02833	-.00149	-.01282	.00665	.00333	.00650	.02832	3.24882
120	-.01920	.01334	.00154	.01157	.01902	-.00143	-.00220	.01301	1.87404
121	.02839	.02871	.00687	.00203	.00583	.02082	.00648	.01932	6.24391
122	-.00812	.01179	.00689	-.00851	.02716	-.00183	.01601	.00399	2.46315
123	.00321	.01944	.00977	.00101	.00842	-.00644	.01685	.05063	5.41299
124	.01290	.02791	.01449	.00766	.02938	.00185	-.00028	.01186	5.55275
125	.02345	.02579	.00446	-.00117	.01556	.01763	.00438	.01237	5.38617
126	.01707	.03908	-.00018	-.00224	.01530	.01100	.01395	.00891	5.38847
127	.00633	.01833	.00954	.00184	.00945	.02365	.02049	.00092	4.78124
128	-.00369	.02287	.00051	.00677	.02459	-.01349	.00430	.03725	4.13125
129	.00332	.02047	-.00053	-.00475	.00263	.01475	.00411	.03755	4.09340
130	-.00450	.03411	.00283	.00362	.02472	.00974	-.00094	.02167	4.79417
131	.00880	.02291	.00626	.01994	.00625	.01158	.01002	.02426	5.81005
132	.02446	.03992	.00875	.01361	-.01029	.00712	-.00138	.01079	4.91590
133	-.00044	.00419	.00349	.01693	.02881	.01311	.00528	-.00714	3.37538
134	-.00262	.02369	.00645	.00297	.01744	-.00099	.00622	.02367	4.03415

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without CS (150 Job Families)

Job Family	GS	AR	NO	AS	MK	MC	EI	VE	k
135	-.00188	.00639	.01203	.00277	.01753	-.00039	.02188	.04770	5.58193
136	-.00250	.03363	.00817	.00113	.02103	.01288	.01144	.05290	7.30527
137	.00182	.01560	.00386	.01039	.01744	.01310	.00564	.02788	5.04613
138	-.00305	.02392	.02382	.00592	.00483	.01438	.00314	.00991	4.40762
139	-.00185	.02461	.01438	.00895	.03064	.01376	.00102	.05765	7.86893
140	.00652	.01807	.01726	.02523	.03162	.01595	-.00350	.03389	7.65969
141	-.00338	.01470	.00898	.03554	.01350	.01006	.00377	.03453	6.23115
142	.01827	-.00158	.00652	-.00226	.02237	.01138	.01587	.04817	6.24282
143	-.00682	.03624	-.00448	.00599	.02326	.01222	.00591	.04873	6.36176
144	.00128	.02352	.00571	.00250	.01270	.00634	.00751	.01466	3.90463
145	-.00538	.03436	.00884	.00918	.02202	.00531	-.00377	.02205	4.87666
146	.00335	.02220	.00739	.01957	.02661	.01107	-.00502	.03804	6.49628
147	.01790	.02598	.00976	.01143	.03232	.00293	-.00145	-.00737	4.78981
148	.00373	.01660	.02232	.01077	.01262	.01353	.01048	.02471	6.07665
149	.02091	.02191	-.01493	.00878	.00759	.01295	.00235	.02202	4.27304
150	.00295	.00167	.00744	.01540	.02888	.01444	.01300	-.01387	3.67439

Appendix D6

Seven-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO and CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE
1	.03112	.03435	.09280	.15323	.09347	.04261	.03002
2	.03510	.13817	.17452	.11687	.07826	.04935	.05485
3	.06562	.08076	.16741	.17953	.06085	.04122	.05182
4	.06517	.08583	.11033	.09513	.08155	.05033	.01916
5	.07794	.08073	.10733	.15714	.11793	.04501	.03599
6	.07585	.08605	.16565	.16045	.16822	.01036	-.00029
7	-.10156	.12416	.35841	.11761	.06531	.00768	.10903
8	.03627	.06246	.11586	.12926	.14107	.03603	.04324
9	.01953	.00400	.23903	.23394	.13934	.07640	.05902
10	-.01830	.25763	.03453	.21733	.04459	.07695	.12976
11	.05884	.15373	.11869	.16177	.02182	.06568	.10502
12	.01235	.17231	.08141	.16675	.03740	.02039	.11095
13	-.00445	.09585	.13454	.19819	.07435	.02705	.11199
14	.02489	.17135	.19475	.05950	.05832	.03056	.08973
15	.08237	.28748	.31235	.00260	.06296	-.07302	.07179
16	.11644	.16525	.14156	.13031	.08623	.02054	.02479
17	.05365	.08894	.23342	.11728	.16978	.05670	.05273
18	.03291	.17985	.17998	.11375	.13214	.10758	-.04782
19	.02227	.14339	.09611	.12864	.11161	.00397	.12332
20	.03523	.10894	.13919	.10783	.08677	.10112	.09542
21	.08046	.09044	.13714	.10416	.12049	.06659	.07868
22	.05054	.16402	.15772	.07327	.14816	.08243	.05744
23	-.01825	.17006	.12108	.01625	.09356	.13644	.08732
24	.06832	-.03034	.11820	.28764	.08263	.14373	.16264
25	-.04028	.20416	-.01971	.02108	.14273	.07011	.12119
26	-.00429	.15053	.10240	.04842	.13388	-.03153	.33145

Seven-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO and CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE
27	.00352	.11875	.12801	.15309	.06437	.13367	.13725
28	.04906	.08129	.12446	.16524	.10567	.10662	.08208
29	-.02179	.08710	.21725	.10034	.10056	.08632	.09189
30	.04764	.19298	.07621	.22529	.06857	.14098	.06648
31	-.08118	.04791	.09426	.17696	.00586	.17676	.08377
32	-.04580	.10458	.13810	.16074	.12391	.16663	.04862
33	.03808	.14122	.13740	.11315	.08457	.12490	.10352
34	.08984	.21226	.07334	.20282	.01425	.07761	.18558
35	-.02508	.10202	.18140	.15416	.04896	.11977	.10766
36	.07022	.27837	.13745	.14488	.03999	.04425	.08112
37	.17470	.17088	.00204	.24574	-.05102	.08441	.10056
38	.07542	.12825	.05435	.20074	.00834	.14583	.22420
39	-.06311	.12907	.07226	.09894	.05595	.07621	.31050
40	.11819	.02007	.19217	.13497	.09292	.08949	.00126
41	.00682	.08278	.23158	.10130	.06708	.08320	.12648
42	.10938	.04463	.32714	.15167	.05783	.04508	.15701
43	.14432	.11473	.13278	.26431	.17341	.18161	-.00069
44	-.03399	.04470	.35522	.12950	.14695	-.00227	.19436
45	.12790	.14228	.16593	.07129	.09937	.09233	-.01794
46	.11045	.04956	.15563	.12730	.07126	.11460	-.03537
47	-.07676	.24847	.20434	.12030	.05241	.07188	.13743
48	.11541	.02791	.12612	.18317	.25512	-.02989	.02367
49	-.07356	-.00162	.25350	.23096	.06004	.19066	.15968
50	.13790	.32096	.20139	-.12160	-.03491	.02868	.12904
51	.16301	.05414	-.01047	.24662	.01094	.06228	.20839
52	.02381	.06839	.22512	.16367	.13384	.06583	.01763
53	.18250	.04145	.16113	.12468	.14856	.16251	-.06744

Seven-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO and CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE
54	-.12993	.06346	.17455	.06378	.02284	.18820	.07378
55	-.08230	.07704	.21476	.27310	.06010	.17814	.03817
56	-.04675	-.07417	.30390	.32593	-.13273	.18559	.11518
57	.03354	.18244	.07770	.05272	.04968	.28425	.08174
58	.05267	.20924	.22191	.16690	.11527	.20154	-.00278
59	.01970	.18534	.23357	.16515	.15126	.11988	.07033
60	.09590	.15714	.10622	.12036	-.00081	.09239	.12165
61	.16624	.12734	.22004	.02255	.09035	-.06183	.23251
62	.05193	-.02821	.14261	.06702	.12608	.06905	-.05976
63	.03937	.10164	.34469	.13535	.12838	.13344	.02868
64	.10618	.12941	.24102	.10540	.13018	.06456	.00284
65	.13948	.06726	.13700	.12283	.20970	.18154	-.03029
66	.08408	.03948	.22534	.14260	.15495	.08238	.01607
67	.05349	.08359	.41302	.07468	.14981	.14306	-.02629
68	-.02993	.06777	.45247	.04762	.14616	.08699	.13185
69	.00261	.01915	.42985	.14655	.08445	.20029	.04495
70	.03609	.14940	.33334	.01223	.03585	.15468	.02191
71	-.02285	.12577	.15965	.09900	.09605	.03694	.14414
72	-.04527	.12345	.29826	.08022	.12888	.03321	.06223
73	.07741	.06728	.43088	.08332	.17241	.06838	-.00492
74	-.02391	.05845	.43747	.08446	.10433	.10618	.10716
75	.01586	.09232	.39940	.03697	.07642	.12535	.04826
76	.01865	.11804	.35043	.05258	.18043	.12177	.05625
77	-.01666	.13388	.44502	.06639	.13865	.09891	.07721
78	-.02062	.10382	.31710	.18396	.09793	.03340	.16934
79	-.06146	.21428	.16735	.04272	.29852	-.02583	.14684
80	-.01446	.09904	.23300	.17329	.11374	.09140	.13597

Seven-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO and CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE
81	.06172	.16853	.20199	.14375	.12530	.09359	.09314
82	-.02147	.10585	.17274	.06846	.16641	.08753	.07531
83	-.00632	.12375	.24330	.06374	.14964	.15525	.08727
84	.00960	-.05687	.05446	.19103	.01559	-.12446	.21933
85	-.02271	.08270	.19726	.18001	.05377	-.06662	.22021
86	.07162	.18705	.15709	.15287	.08473	.12533	.06405
87	.08844	.27505	.05529	.14070	.08466	.11664	.04496
88	.02907	.11110	.07324	.16280	-.00678	.10148	.14297
89	.10856	-.09996	.18641	.09833	.15318	.10634	.07128
90	-.01515	.11761	.03884	.24909	.00935	.09148	.24245
91	-.01641	.33794	.00918	.17864	.07184	.00321	.18086
92	-.07306	.20702	-.02780	.27211	.03426	.06919	.27054
93	.05597	.21788	-.05220	.15554	-.12148	.09254	.26298
94	-.03425	.23580	-.06414	.20043	.00969	-.02605	.23658
95	.01893	.12997	.06564	.15051	.04032	-.07366	.32368
96	-.02410	.05958	.08622	.22255	.11312	.08048	.05682
97	.00713	.14340	-.04839	.20072	.04642	.08936	.08814
98	-.03779	.21383	-.02714	.22457	-.02110	-.03198	.17066
99	.07655	.15064	-.06403	.31410	-.07315	.03931	.17098
100	-.01008	.18376	-.06268	.14485	-.00918	.09000	.32773
101	-.05420	.25306	.01169	.26117	.01658	.02866	.16741
102	.01398	.24488	-.01891	.18594	-.03840	.03838	.16921
103	-.03464	.23756	-.01033	.23094	-.00783	.07389	.11083
104	-.07236	.29560	-.01504	.22035	-.06873	.09027	.24009
105	.01624	.25875	.08699	.18105	-.06308	-.13655	.18498
106	-.03930	.20966	.02320	.26883	-.05772	-.01399	.20186
107	-.03002	.23251	-.07830	.21770	-.00123	.09438	.12393

Seven-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO and CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE
108	.01645	.15582	.06950	.09228	.10688	.08633	.09896
109	-.06452	.28609	-.00473	.06716	.11488	.07586	.24866
110	.05626	.15219	.19263	.13779	.10101	.08392	.04451
111	-.03994	.11000	.09103	.14168	.17995	.06062	.04313
112	.00238	.17118	.15947	.09562	-.02301	-.00017	-.04019
113	.09540	.15032	.15584	.29382	.06601	.07533	.02443
114	-.00488	.04389	.19052	.21747	-.01407	.04483	.06290
115	.02035	.11908	.22743	.04512	.10639	.07529	.06204
116	-.03824	.12800	-.00789	.12289	-.05031	.00728	.16069
117	.04393	.10289	.10910	.09529	.11188	.04803	.09156
118	.25060	.16564	-.03935	.16766	.03230	.03463	.06435
119	.02529	.19856	-.11214	.04879	.02889	.05468	.15851
120	-.14602	.09622	.10102	.15075	-.01294	-.01902	.07237
121	.21008	.21146	.01290	.05857	.17207	.05029	.10644
122	-.06568	.09185	-.08024	.22430	-.01913	.12938	.02083
123	.01806	.14948	.00178	.08425	-.05954	.13485	.28072
124	.08823	.21519	.05707	.25621	.00783	-.00977	.06315
125	.17427	.18789	-.01359	.12946	.14641	.03406	.06816
126	.12905	.27618	-.01969	.11851	.09290	.11586	.04980
127	.04178	.14137	.00925	.09187	.19450	.16518	.00309
128	-.02819	.16241	.05940	.19201	-.11413	.03544	.20797
129	.02540	.14413	-.04158	.01945	.12473	.03437	.20988
130	-.03577	.24473	.02992	.19752	.08068	-.00926	.12046
131	.06252	.16968	.17156	.06063	.09438	.07998	.13421
132	.17921	.29308	.11381	-.06301	.05543	-.01590	.05841
133	-.00550	.03391	.14699	.23055	.10879	.04203	-.04062
134	-.02387	.17545	.02151	.14791	-.01178	.04836	.13084

Seven-Test, First-Tier Composite Beta Weights for ASVAB Tests Without NO and CS (Using the Total Sample A + B + C and 150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE
135	-.02183	.05994	.01571	.15942	-.00969	.17541	.26387
136	-.02406	.24788	.00401	.17913	.10436	.09079	.29377
137	.01130	.11507	.08898	.14290	.10848	.04482	.15491
138	-.03811	.19838	.03487	.08353	.10862	.01386	.05029
139	-.02309	.19169	.06853	.26582	.10846	.00114	.31897
140	.03833	.14894	.21019	.27895	.12538	-.03790	.18564
141	-.03121	.11496	.30736	.12223	.08012	.02672	.19097
142	.13388	-.00318	-.02471	.18634	.09252	.12839	.26768
143	-.04867	.25084	.05619	.17201	.10552	.05134	.27315
144	.00608	.17339	.01795	.10965	.05045	.05943	.08066
145	-.04624	.25389	.07463	.18812	.04006	-.03582	.12126
146	.02061	.16609	.16745	.22099	.08946	-.04543	.21094
147	.12897	.19573	.09383	.26992	.01954	-.01704	-.04324
148	.01406	.14479	.07883	.14117	.10230	.07555	.13327
149	.16738	.13665	.08846	.03013	.11727	.02716	.12617
150	.01756	.02097	.13061	.23873	.11789	.10409	-.07907

Appendix D7

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO and CS (150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE	k
1	.00412	.00486	.01051	.01973	.01108	.00513	.00537	3.19326
2	.00465	.01953	.01976	.01505	.00927	.00595	.00982	4.42167
3	.00869	.01142	.01895	.02311	.00721	.00497	.00928	4.38939
4	.00863	.01213	.01249	.01225	.00966	.00606	.00343	3.39954
5	.01032	.01141	.01215	.02023	.01397	.00542	.00644	4.20106
6	.01004	.01217	.01875	.02066	.01993	.00125	-.00005	4.35841
7	-.01345	.01755	.04058	.01514	.00774	.00092	.01952	4.65580
8	.00480	.00883	.01312	.01664	.01672	.00434	.00774	3.80386
9	.00259	.00057	.02706	.03012	.01651	.00920	.01057	5.08455
10	-.00242	.03643	.00391	.02798	.00528	.00927	.02323	5.42980
11	.00779	.02174	.01344	.02083	.00259	.00791	.01880	4.88072
12	.00164	.02436	.00922	.02147	.00443	.00246	.01986	4.37631
13	-.00059	.01355	.01523	.02552	.00881	.00326	.02005	4.50966
14	.00330	.02423	.02205	.00766	.00691	.00368	.01606	4.42322
15	.01091	.04065	.03536	.00034	.00746	-.00880	.01285	5.21971
16	.01542	.02336	.01603	.01678	.01022	.00247	.00444	4.65945
17	.00710	.01257	.02643	.01510	.02012	.00683	.00944	5.15177
18	.00436	.02543	.02038	.01464	.01566	.01296	-.00856	4.46512
19	.00295	.02027	.01088	.01656	.01322	.00048	.02208	4.55262
20	.00466	.01540	.01576	.01388	.01028	.01218	.01708	4.69701
21	.01065	.01279	.01553	.01341	.01428	.00802	.01409	4.67455
22	.00669	.02319	.01786	.00943	.01756	.00993	.01028	5.00693
23	-.00242	.02404	.01371	.00209	.01109	.01644	.01563	4.25243
24	.00905	-.00429	.01338	.03703	.00979	.01732	.02912	5.83843
25	-.00533	.02887	-.00223	.00271	.01691	.00845	.02169	3.75324
26	-.00057	.02128	.01159	.00623	.01586	-.00380	.05933	5.81646

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO and CS (150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE	k
27	.00047	.01679	.01449	.01971	.00763	.01610	.02457	5.24172
28	.00650	.01149	.01409	.02127	.01252	.01285	.01469	4.90858
29	-.00289	.01231	.02460	.01292	.01192	.01040	.01645	4.52348
30	.00631	.02729	.00863	.02900	.00813	.01698	.01190	5.66642
31	-.01075	.00677	.01067	.02278	.00069	.02129	.01500	3.47933
32	-.00606	.01479	.01564	.02069	.01468	.02007	.00870	4.65548
33	.00504	.01997	.01556	.01457	.01002	.01505	.01853	5.19263
34	.01189	.03001	.00830	.02611	.00169	.00935	.03322	6.31698
35	-.00332	.01442	.02054	.01985	.00580	.01443	.01927	4.78356
36	.00930	.03936	.01556	.01865	.00474	.00533	.01452	5.63854
37	.02313	.02416	.00023	.03164	-.00605	.01017	.01800	5.27355
38	.00999	.01813	.00615	.02584	.00099	.01757	.04013	6.22361
39	-.00836	.01825	.00818	.01274	.00663	.00918	.05558	5.38801
40	.01565	.00284	.02176	.01738	.01101	.01078	.00023	4.18519
41	.00090	.01170	.02622	.01304	.00795	.01002	.02264	4.87629
42	.01448	.00631	.03704	.01953	.00685	.00543	.02811	6.20207
43	.01911	.01622	.01503	.03403	.02055	.02188	-.00012	6.64134
44	-.00450	.00632	.04022	.01667	.01741	-.00027	.03479	5.85832
45	.01693	.02012	.01879	.00918	.01177	.01112	-.00321	4.45413
46	.01462	.00701	.01762	.01639	.00844	.01381	-.00633	3.75230
47	-.01016	.03513	.02313	.01549	.00621	.00866	.02460	5.42806
48	.01528	.00395	.01428	.02358	.03023	-.00360	.00424	4.64050
49	-.00974	-.00023	.02870	.02973	.00711	.02297	.02858	5.63409
50	.01826	.04538	.02280	-.01565	-.00414	.00346	.02310	4.91627
51	.02158	.00765	-.00119	.03175	.00130	.00750	.03731	5.53451
52	.00315	.00967	.02549	.02107	.01586	.00793	.00316	4.54763
53	.02416	.00586	.01824	.01605	.01760	.01958	-.01207	4.69566

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO and CS (150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE	k
54	-.01720	.00897	.01976	.00821	.00271	.02267	.01321	3.07611
55	-.01090	.01089	.02431	.03516	.00712	.02146	.00683	4.97425
56	-.00619	-.01049	.03441	.04196	-.01573	.02236	.02062	4.53455
57	.00444	.02579	.00880	.00679	.00589	.03425	.01463	5.27965
58	.00697	.02958	.02512	.02149	.01366	.02428	-.00050	6.33472
59	.00261	.02620	.02644	.02126	.01792	.01444	.01259	6.39632
60	.01270	.02222	.01203	.01549	-.00010	.01113	.02178	4.99289
61	.02201	.01800	.02491	.00290	.01071	-.00745	.04162	5.95439
62	.00688	-.00399	.01615	.00863	.01494	.00832	-.01070	2.12528
63	.00521	.01437	.03903	.01743	.01521	.01608	.00513	5.92895
64	.01406	.01830	.02729	.01357	.01543	.00778	.00051	5.10619
65	.01847	.00951	.01551	.01581	.02485	.02187	-.00542	5.29303
66	.01113	.00558	.02551	.01836	.01836	.00992	.00288	4.83461
67	.00708	.01182	.04676	.00961	.01775	.01723	-.00471	5.57849
68	-.00396	.00958	.05123	.00613	.01732	.01048	.02360	6.06451
69	.00035	.00271	.04867	.01887	.01001	.02413	.00805	5.94615
70	.00478	.02112	.03774	.00157	.00425	.01864	.00392	4.85467
71	-.00302	.01778	.01807	.01275	.01138	.00445	.02580	4.60208
72	-.00599	.01745	.03377	.01033	.01527	.00400	.01114	4.55096
73	.01025	.00951	.04878	.01073	.02043	.00824	-.00088	5.66418
74	-.00317	.00826	.04953	.01087	.01236	.01279	.01918	5.81170
75	.00210	.01305	.04522	.00476	.00906	.01510	.00864	5.17772
76	.00247	.01669	.03967	.00677	.02138	.01467	.01007	5.91174
77	-.00221	.01893	.05038	.00855	.01643	.01192	.01382	6.23562
78	-.00273	.01468	.03590	.02368	.01160	.00402	.03031	6.19570
79	-.00814	.03030	.01895	.00550	.03537	-.00311	.02629	5.58469
80	-.00191	.01400	.02638	.02231	.01348	.01101	.02434	5.77498

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO and CS (150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE	k
81	.00817	.02383	.02287	.01851	.01485	.01128	.01667	6.11478
82	-.00284	.01497	.01956	.00881	.01972	.01055	.01348	4.45501
83	-.00084	.01750	.02755	.00821	.01773	.01870	.01562	5.51830
84	.00127	-.00804	.00617	.02459	.00185	-.01499	.03926	2.63379
85	-.00301	.01169	.02233	.02317	.00637	-.00803	.03942	4.84767
86	.00948	.02645	.01778	.01968	.01004	.01510	.01147	5.77614
87	.01171	.03889	.00626	.01811	.01003	.01405	.00805	5.61437
88	.00385	.01571	.00829	.02096	-.00080	.01223	.02559	4.49434
89	.01437	-.01413	.02110	.01266	.01815	.01281	.01276	4.10396
90	-.00201	.01663	.00440	.03207	.00111	.01102	.04340	5.58452
91	-.00217	.04778	.00104	.02300	.00851	.00039	.03238	5.82197
92	-.00967	.02927	-.00315	.03503	.00406	.00833	.04843	5.88293
93	.00741	.03081	-.00591	.02002	-.01439	.01115	.04708	5.01650
94	-.00453	.03334	-.00726	.02580	.00115	-.00314	.04235	4.59223
95	.00251	.01838	.00743	.01938	.00478	-.00887	.05794	5.34596
96	-.00319	.00842	.00976	.02865	.01340	.00970	.01017	4.03655
97	.00094	.02028	-.00548	.02584	.00550	.01077	.01578	3.84473
98	-.00500	.03023	-.00307	.02891	-.00250	-.00385	.03055	3.93080
99	.01013	.02130	-.00725	.04044	-.00867	.00474	.03061	4.74363
100	-.00134	.02598	-.00710	.01865	-.00109	.01084	.05867	5.48583
101	-.00718	.03578	.00132	.03362	.00197	.00345	.02997	5.17575
102	.00185	.03462	-.00214	.02394	-.00455	.00462	.03029	4.63002
103	-.00459	.03359	-.00117	.02973	-.00093	.00890	.01984	4.45598
104	-.00958	.04179	-.00170	.02837	-.00814	.01088	.04298	5.46569
105	.00215	.03658	.00985	.02331	-.00747	-.01645	.03311	4.24583
106	-.00520	.02964	.00263	.03461	-.00684	-.00169	.03614	4.66183
107	-.00398	.03287	-.00886	.02803	-.00015	.01137	.02219	4.24788

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO and CS (150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE	k
108	.00218	.02203	.00787	.01188	.01266	.01040	.01772	4.46015
109	-.00854	.04045	-.00054	.00865	.01361	.00914	.04451	5.65465
110	.00745	.02152	.02181	.01774	.01197	.01011	.00797	5.18409
111	-.00529	.01555	.01031	.01824	.02132	.00730	.00772	3.96423
112	.00032	.02420	.01805	.01231	-.00273	-.00002	-.00720	2.35244
113	.01263	.02125	.01764	.03783	.00782	.00908	.00437	5.78748
114	-.00065	.00621	.02157	.02800	-.00167	.00540	.01126	3.67089
115	.00269	.01684	.02575	.00581	.01261	.00907	.01111	4.43137
116	-.00506	.01810	-.00089	.01582	-.00596	.00088	.02877	2.69930
117	.00582	.01455	.01235	.01227	.01326	.00579	.01639	4.23710
118	.03318	.02342	-.00446	.02158	.00383	.00417	.01152	4.86580
119	.00335	.02807	-.01270	.00628	.00342	.00659	.02838	3.32249
120	-.01933	.01360	.01144	.01941	-.00153	-.00229	.01295	1.79748
121	.02781	.02990	.00146	.00754	.02039	.00606	.01905	5.90360
122	-.00870	.01299	-.00908	.02888	-.00227	.01559	.00373	2.12167
123	.00239	.02113	.00020	.01085	-.00706	.01625	.05025	4.92859
124	.01168	.03043	.00646	.03298	.00093	-.00118	.01130	4.83443
125	.02307	.02657	-.00154	.01667	.01735	.00410	.01220	5.16486
126	.01709	.03905	-.00223	.01526	.01101	.01396	.00891	5.39725
127	.00553	.01999	.00105	.01183	.02305	.01990	.00055	4.30854
128	-.00373	.02296	.00673	.02472	-.01352	.00427	.03723	4.10599
129	.00336	.02038	-.00471	.00250	.01478	.00414	.03757	4.11943
130	-.00474	.03460	.00339	.02543	.00956	-.00112	.02156	4.65396
131	.00828	.02399	.01942	.00781	.01118	.00964	.02403	5.49984
132	.02373	.04144	.01289	-.00811	.00657	-.00192	.01046	4.48235
133	-.00073	.00479	.01664	.02968	.01289	.00506	-.00727	3.20219
134	-.00316	.02481	.00243	.01904	-.00140	.00583	.02342	3.71436

Transformation Weights (u) and Constants (k) to Apply to ASVAB Tests in the First Tier Without NO and CS (150 Job Families)

Job Family	GS	AR	AS	MK	MC	EI	VE	k
135	-.00289	.00847	.00178	.02052	-.00115	.02113	.04724	4.98572
136	-.00319	.03505	.00045	.02306	.01237	.01094	.05259	6.90052
137	.00150	.01627	.01007	.01840	.01285	.00540	.02773	4.85470
138	-.00505	.02805	.00395	.01075	.01287	.00167	.00900	3.22664
139	-.00306	.02710	.00776	.03422	.01285	.00014	.05710	7.15597
140	.00507	.02106	.02380	.03591	.01486	-.00457	.03323	6.80402
141	-.00413	.01625	.03480	.01574	.00949	.00322	.03419	5.78606
142	.01773	-.00045	-.00280	.02399	.01096	.01547	.04792	5.91939
143	-.00644	.03547	.00636	.02214	.01250	.00619	.04890	6.58395
144	.00081	.02451	.00203	.01412	.00598	.00716	.01444	3.62147
145	-.00612	.03590	.00845	.02422	.00475	-.00432	.02171	4.43842
146	.00273	.02348	.01896	.02845	.01060	-.00547	.03776	6.12990
147	.01708	.02767	.01062	.03475	.00231	-.00205	-.00774	4.30585
148	.00186	.02047	.00892	.01817	.01212	.00910	.02386	4.97044
149	.02216	.01932	.01002	.00388	.01390	.00327	.02259	5.01324
150	.00232	.00296	.01479	.03073	.01397	.01254	-.01415	3.30547

Appendix E1
Computations for Obtaining Second Tier Statistical Standard Scores from Operational ASVAB Test Scores Without Either NO or CS or Both

The actual beta weights used in the simulations are shown in appendix E2. They are not needed for operational computations. The weights, u, and constants, k, for each job family for the first tier are shown in appendix E3. These are the weights to be used in operational computations.

The procedure for transforming the operational ASVAB test scores into traditional Army standard AA scores required for use in the second tier system is given below:

(1) Obtain the sum of the products of the nine u weighted ASVAB operational test scores for each composite.

(2) Subtract the constant k for each composite from the sum of the weighted scores obtained in (1) above.

This transformation results in obtaining the Army standard score composite for each soldier for each of the 17 job families required for use in the second tier for record-keeping, counseling and establishing minimum cut score.

Appendix E2

Eight-Test Composite Weights for ASVAB Tests Without NO Using the Samples A + B + C. Only Positive Weights Used.

Cluster	GS	AR	CS	AS	MK	MC	EI	VE
1 CL1	.00090	.00000	.15576	.00766	.32836	.04585	.00000	.30720
2 CL2	.00000	.22609	.06048	.06711	.15638	.06283	.04655	.15976
3 CO1	.04674	.06906	.01727	.11906	.17521	.09482	.04817	.06304
4 CO2	.06422	.11183	.05106	.13581	.13733	.10670	.08025	.09494
5 EL1	.01042	.13162	.04081	.16717	.12459	.08244	.12093	.14386
6 EL2	.04610	.11426	.04786	.13402	.18174	.08986	.10986	.10633
7 EL3	.03325	.17189	.14137	.07194	.11074	.05974	.07996	.21921
8 FA	.04164	.11954	.00000	.11243	.16709	.11699	.04958	.09799
9 GM1	.07021	.20045	.04004	.19602	.11929	.08809	.14434	.06690
10 GM2	.08287	.09569	.05956	.18148	.15159	.09535	.08002	.04094
11 MM1	.02418	.10178	.00747	.36922	.08690	.13225	.12730	.04698
12 MM2	.00568	.15307	.05605	.20011	.12494	.13161	.06568	.17822
13 OF	.04456	.15919	.04494	.17639	.09514	.10910	.06870	.10213
14 SC	.00568	.12436	.06418	.09126	.18331	.07481	.11276	.14871
15 ST1	.06485	.12910	.08598	.08099	.10447	.10449	.05901	.11975
16 ST2	.03651	.17430	.09724	.05862	.15126	.07413	.04111	.23455
17 ST3	.02851	.14006	.09544	.11210	.15260	.10500	.06876	.18519

Appendix E3

Transformation weights (u) and constants (k) to apply to ASVAB tests in the Second Tier Without NO (17 job families)

Cluster	GS	AR	CS	AS	MK	MC	EI	VE	k
1 CL1	.00244	.00000	.42479	.02089	.89552	.12504	.00000	.83781	15.32469
2 CL2	.00000	.68970	.18451	.20473	.47704	.19168	.14199	.48735	18.84961
3 CO1	.17797	.26295	.06577	.45332	.66713	.36104	.18341	.24002	20.58016
4 CO2	.20029	.34882	.15925	.42359	.42834	.33282	.25032	.29613	21.97726
5 EL1	.03082	.38931	.12072	.49449	.36854	.24387	.35770	.42553	21.54932
6 EL2	.13508	.33481	.14025	.39271	.53253	.26331	.32192	.31158	21.60887
7 EL3	.09151	.47308	.38909	.19800	.30478	.16441	.22006	.60332	22.21171
8 FA	.14019	.40246	.00000	.37852	.56254	.39385	.16691	.32991	18.71922
9 GM1	.18294	.52229	.10434	.51073	.31081	.22952	.37608	.17432	20.55166
10 GM2	.25859	.29858	.18586	.56628	.47301	.29752	.24970	.12776	22.86526
11 MM1	.06343	.26697	.01959	.96845	.22793	.34688	.33390	.12322	17.51833
12 MM2	.01517	.40860	.14963	.53417	.33352	.35131	.17531	.47574	22.17276
13 OF	.13545	.48384	.13659	.53613	.28918	.33161	.20882	.31043	21.60254
14 SC	.01713	.37527	.19367	.27539	.55316	.22575	.34028	.44876	21.46998
15 ST1	.21228	.42259	.28145	.26512	.34195	.34204	.19316	.39200	22.52922
16 ST2	.10099	.48212	.26896	.16214	.41838	.20504	.11371	.64875	20.00414
17 ST3	.07876	.38693	.26366	.30968	.42158	.29007	.18995	.51160	22.61149

Appendix E4

Eight-Test Composite Weights for ASVAB Tests Without CS Using the Samples A + B + C. Only Positive Weights Used.

Cluster	GS	AR	NO	AS	MK	MC	EI	VE
1 CL1	.00000	.00000	.12513	.00000	.31892	.03828	.01835	.32196
2 CL2	.00000	.22309	.03747	.06128	.15864	.06636	.04485	.17369
3 CO1	.04695	.06130	.03292	.11742	.17082	.09774	.04986	.05900
4 CO2	.06292	.11601	.01006	.13096	.14428	.10793	.07695	.11492
5 EL1	.00961	.13184	.01808	.16331	.12785	.08428	.11924	.15616
6 EL2	.04517	.11422	.02216	.12949	.18534	.09209	.10798	.12041
7 EL3	.03154	.15714	.11253	.05855	.11063	.07033	.07886	.24357
8 FA	.04164	.11954	.00000	.11243	.16709	.11699	.04958	.09799
9 GM1	.06903	.20618	.00000	.19222	.12654	.08838	.14100	.08546
10 GM2	.08179	.09461	.03091	.17583	.15531	.09841	.07799	.05724
11 MM1	.02396	.10285	.00000	.36851	.08825	.13230	.12667	.05044
12 MM2	.00519	.14467	.05283	.19480	.12302	.13650	.06602	.18488
13 OF	.04353	.16151	.01322	.17213	.10025	.11055	.06621	.11812
14 SC	.00438	.12496	.02761	.08518	.18862	.07763	.11003	.16836
15 ST1	.06261	.13706	.01397	.07284	.11684	.10631	.05316	.15448
16 ST2	.03422	.17991	.02675	.04940	.16275	.07711	.03554	.26982
17 ST3	.02669	.13954	.04563	.10305	.15946	.10958	.06513	.21273

Appendix E5

Transformation weights (u) and constants (k) to apply to ASVAB tests in the Second Tier Without CS (17 job families)

Cluster	GS	AR	NO	AS	MK	MC	EI	VE	k
1 CL1	.00000	.00000	.34398	.00000	.87668	.10524	.05043	.88505	13.06940
2 CL2	.00000	.68176	.11450	.18727	.48480	.20280	.13705	.53081	16.94935
3 CO1	.17866	.23323	.12525	.44681	.64996	.37191	.18972	.22452	21.00311
4 CO2	.19665	.36256	.03144	.40927	.45088	.33730	.24048	.35913	19.38504
5 EL1	.02845	.39034	.05353	.48352	.37855	.24953	.35305	.46236	19.96620
6 EL2	.13253	.33512	.06502	.37990	.54378	.27019	.31679	.35327	19.83001
7 EL3	.08730	.43495	.31148	.16207	.30622	.19466	.21829	.67420	19.45834
8 FA	.14019	.40245	.00000	.37851	.56253	.39384	.16690	.32990	18.71629
9 GM1	.18000	.53767	.00000	.50125	.32998	.23048	.36768	.22285	18.49481
10 GM2	.25575	.29583	.09665	.54983	.48565	.30772	.24388	.17900	20.71526
11 MM1	.06284	.26975	.00000	.96651	.23146	.34699	.33224	.13229	17.10368
12 MM2	.01385	.38636	.14108	.52025	.32855	.36455	.17633	.49375	21.23559
13 OF	.13248	.49157	.04025	.52389	.30514	.33648	.20152	.35951	19.54179
14 SC	.01326	.37804	.08352	.25768	.57061	.23483	.33287	.50931	19.00596
15 ST1	.20621	.45141	.04602	.23989	.38481	.35012	.17509	.50879	18.11731
16 ST2	.09516	.50030	.07439	.13737	.45259	.21444	.09883	.75033	16.16966
17 ST3	.07406	.38720	.12662	.28596	.44248	.30406	.18074	.59030	19.57075

Appendix E6

Seven-Test Composite Weights for ASVAB Tests Without NO and CS Using the Samples A + B + C. Only Positive Weights Used.

Cluster		GS	AR	AS	MK	MC	EI	VE
1	CL1	.00000	.00000	.00000	.36801	.03534	.00815	.37378
2	CL2	.00000	.23472	.06118	.16708	.06309	.04109	.18704
3	CO1	.04623	.07153	.11742	.17833	.09494	.04673	.07104
4	CO2	.06270	.11914	.13096	.14657	.10708	.07599	.11860
5	EL1	.00921	.13746	.16330	.13198	.08274	.11752	.16277
6	EL2	.04468	.12111	.12948	.19041	.09021	.10587	.12851
7	EL3	.02906	.19213	.05853	.13633	.06077	.06816	.28471
8	FA	.04164	.11954	.11243	.16709	.11699	.04958	.09799
9	GM1	.06903	.20618	.19222	.12654	.08838	.14100	.08546
10	GM2	.08111	.10422	.17583	.16237	.09578	.07505	.06854
11	MM1	.02396	.10285	.36851	.08825	.13230	.12667	.05044
12	MM2	.00402	.16109	.19479	.13509	.13202	.06100	.20419
13	OF	.04323	.16562	.17213	.10328	.10943	.06495	.12295
14	SC	.00377	.13355	.08517	.19493	.07528	.10741	.17845
15	ST1	.06231	.14141	.07284	.12003	.10512	.05183	.15959
16	ST2	.03363	.18822	.04939	.16886	.07484	.03299	.27960
17	ST3	.02568	.15373	.10304	.16988	.10570	.06079	.22941

Appendix E7

Transformation weights (u) and constants (k) to apply to ASVAB tests in the Second Tier Without NO and CS (17 job families)

Cluster	GS	AR	AS	MK	MC	EI	VE	k
1 CL1	.00000	.00000	.00000	1.01608	.09756	.02250	1.03199	8.40654
2 CL2	.00000	.71792	.18713	.51103	.19298	.12569	.57210	15.34294
3 CO1	.17608	.27246	.44723	.67927	.36164	.17798	.27058	19.26222
4 CO2	.19597	.37236	.40929	.45809	.33465	.23750	.37065	18.92512
5 EL1	.02728	.40706	.48359	.39085	.24503	.34802	.48202	19.19236
6 EL2	.13113	.35544	.37999	.55878	.26474	.31069	.37714	18.89584
7 EL3	.08095	.53519	.16303	.37977	.16928	.18985	.79309	15.55793
8 FA	.14019	.40246	.37852	.56254	.39385	.16691	.32991	18.71933
9 GM1	.18000	.53768	.50126	.32999	.23048	.36769	.22285	18.49790
10 GM2	.25378	.32608	.55014	.50804	.29969	.23482	.21446	19.35053
11 MM1	.06285	.26978	.96662	.23148	.34703	.33227	.13230	17.11728
12 MM2	.01076	.43078	.52089	.36125	.35303	.16311	.54603	19.29216
13 OF	.13160	.50414	.52394	.31436	.33310	.19771	.37426	18.95577
14 SC	.01142	.40419	.25777	.58996	.22784	.32507	.54009	17.81739
15 ST1	.20523	.46579	.23991	.39537	.34626	.17074	.52569	17.44907
16 ST2	.09356	.52361	.13740	.46975	.20820	.09178	.77780	15.10488
17 ST3	.07134	.42701	.28623	.47190	.29361	.16887	.63726	17.81072

Appendix F1

Sample Sizes by Total, Gender and Race for Each Family (66 Families)

Family Name	Men	Women	Whites	Blacks	Total
	N / %	N / %	N / %	N / %	N / %
11B	3490	0	2906	584	3490
	100.00	0.00	83.27	16.73	100.00
11C	1896	0	1605	291	1896
	100.00	0.00	84.65	15.35	100.00
11H	1027	0	873	154	1027
	100.00	0.00	85.00	15.00	100.00
11M	1416	0	1157	259	1416
	100.00	0.00	81.71	18.29	100.00
12C	726	0	596	130	726
	100.00	0.00	82.09	17.91	100.00
13B	7851	0	4242	3609	7851
	100.00	0.00	54.03	45.97	100.00
13F	1757	0	1431	326	1757
	100.00	0.00	81.45	18.55	100.00
13M	375	0	342	33	375
	100.00	0.00	91.20	8.80	100.00

Sample Sizes by Total, Gender and Race for Each Family (66 Families)

Family Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
13N	463	11	387	87	474
	97.68	2.32	81.65	18.35	100.00
13R	162	0	134	28	162
	100.00	0.00	82.72	17.28	100.00
16D	247	32	230	49	279
	88.53	11.47	82.44	17.56	100.00
16P	450	0	378	72	450
	100.00	0.00	84.00	16.00	100.00
16R	399	0	340	59	399
	100.00	0.00	85.21	14.79	100.00
16S	837	0	521	316	837
	100.00	0.00	62.25	37.75	100.00
19E	1661	0	1298	363	1661
	100.00	0.00	78.15	21.85	100.00
19K	2714	0	2222	492	2714
	100.00	0.00	81.87	18.13	100.00
29E	368	27	331	64	395
	93.16	6.84	83.80	16.20	100.00

Sample Sizes by Total, Gender and Race for Each Family (66 Families)

Family Name	Men	Women	Whites	Blacks	Total
	N / %	N / %	N / %	N / %	N / %
29J	259	14	235	38	273
	94.87	5.13	86.08	13.92	100.00
29N	281	26	198	109	307
	91.53	8.47	64.50	35.50	100.00
29V	135	14	133	16	149
	90.60	9.40	89.26	10.74	100.00
31C	2587	252	2376	463	2839
	91.12	8.88	83.69	16.31	100.00
31K	2531	219	1667	1083	2750
	92.04	7.96	60.62	39.38	100.00
31L	857	230	570	517	1087
	78.84	21.16	52.44	47.56	100.00
31V	1599	130	1224	505	1729
	92.48	7.52	70.79	29.21	100.00
33T	68	3	70	1	71
	95.77	4.23	98.59	1.41	100.00
35K	161	36	159	38	197
	81.73	18.27	80.71	19.29	100.00

Sample Sizes by Total, Gender and Race for Each Family (66 Families)

Family Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
43E	354	23	317	60	377
	93.90	6.10	84.08	15.92	100.00
44B	410	7	335	82	417
	98.32	1.68	80.34	19.66	100.00
44E	232	2	217	17	234
	99.15	0.85	92.74	7.26	100.00
45K	321	7	274	54	328
	97.87	2.13	83.54	16.46	100.00
51B	839	20	697	162	859
	97.67	2.33	81.14	18.86	100.00
52D	2285	109	1872	522	2394
	95.45	4.55	78.20	21.80	100.00
54B	995	83	781	297	1078
	92.30	7.70	72.45	27.55	100.00
55B	840	79	664	255	919
	91.40	8.60	72.25	27.75	100.00
62B	1090	33	864	259	1123
	97.06	2.94	76.94	23.06	100.00

Sample Sizes by Total, Gender and Race for Each Family (66 Families)

Family Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
62E	676	7	599	84	683
	98.98	1.02	87.70	12.30	100.00
62J	378	4	311	71	382
	98.95	1.05	81.41	18.59	100.00
63B	4040	399	3284	1155	4439
	91.01	8.99	73.98	26.02	100.00
63E	540	0	467	73	540
	100.00	0.00	86.48	13.52	100.00
63G	300	11	261	50	311
	96.46	3.54	83.92	16.08	100.00
63S	931	16	873	74	947
	98.31	1.69	92.19	7.81	100.00
63T	700	0	662	38	700
	100.00	0.00	94.57	5.43	100.00
67V	741	16	696	61	757
	97.89	2.11	91.94	8.06	100.00
68B	215	41	235	21	256
	83.98	16.02	91.80	8.20	100.00

Sample Sizes by Total, Gender and Race for Each Family (66 Families)

Family Name	Men N / %	Women N / %	Whites N / %	Blacks N / %	Total N / %
68G	378	6	353	31	384
	98.44	1.56	91.93	8.07	100.00
68J	355	12	307	60	367
	96.73	3.27	83.65	16.35	100.00
71D	378	172	440	110	550
	68.73	31.27	80.00	20.00	100.00
71L	238	527	358	407	765
	31.11	68.89	46.80	53.20	100.00
71M	249	128	298	79	377
	66.05	33.95	79.05	20.95	100.00
72E	502	136	372	266	638
	78.68	21.32	58.31	41.69	100.00
72G	324	325	388	261	649
	49.92	50.08	59.78	40.22	100.00
73C	449	350	437	362	799
	56.20	43.80	54.69	45.31	100.00
74D	200	127	236	91	327
	61.16	38.84	72.17	27.83	100.00

Sample Sizes by Total, Gender and Race for Each Family (66 Families)

Family Name	Men	Women	Whites	Blacks	Total
	N / %	N / %	N / %	N / %	N / %
75B	1051	491	821	721	1542
	68.16	31.84	53.24	46.76	100.00
75D	337	652	414	575	989
	34.07	65.93	41.86	58.14	100.00
76C	2263	140	1402	1001	2403
	94.17	5.83	58.34	41.66	100.00
76Y	3591	688	2432	1847	4279
	83.92	16.08	56.84	43.16	100.00
77F	2456	390	1621	1225	2846
	86.30	13.70	56.96	43.04	100.00
81E	81	48	108	21	129
	62.79	37.21	83.72	16.28	100.00
84B	84	11	84	11	95
	88.42	11.58	88.42	11.58	100.00
84F	58	33	60	31	91
	63.74	36.26	65.93	34.07	100.00
88H	469	64	316	217	533
	87.99	12.01	59.29	40.71	100.00

Sample Sizes by Total, Gender and Race for Each Family (66 Families)

Family Name	Men	Women	Whites	Blacks	Total
	N / %	N / %	N / %	N / %	N / %
88M	4758	610	3694	1674	5368
	88.64	11.36	68.82	31.18	100.00
91A	1493	297	1306	484	1790
	83.41	16.59	72.96	27.04	100.00
94B	3069	718	1772	2015	3787
	81.04	18.96	46.79	53.21	100.00
95B	2059	310	2182	187	2369
	86.91	13.09	92.11	7.89	100.00
Totals:	75046	8086	58435	24697	83132
	90.27	9.73	70.29	29.71	100.00

Appendix F2

Sample Sizes by Total, Gender and Race for Each Family (25 Families)

Family Name	Men	Women	Whites	Blacks	Total
	N / %	N / %	N / %	N / %	N / %
12C	726	0	596	130	726
	100.00	0.00	82.09	17.91	100.00
13R	162	0	134	28	162
	100.00	0.00	82.72	17.28	100.00
29V	135	14	133	16	149
	90.60	9.40	89.26	10.74	100.00
33T	68	3	70	1	71
	95.77	4.23	98.59	1.41	100.00
63T	700	0	662	38	700
	100.00	0.00	94.57	5.43	100.00
67V	741	16	696	61	757
	97.89	2.11	91.94	8.06	100.00
72E	502	136	372	266	638
	78.68	21.32	58.31	41.69	100.00
76C	2263	140	1402	1001	2403
	94.17	5.83	58.34	41.66	100.00

Sample Sizes by Total, Gender and Race for Each Family (25 Families)

88H	469	64	316	217	533
	87.99	12.01	59.29	40.71	100.00
95B	2059	310	2182	187	2369
	86.91	13.09	92.11	7.89	100.00
011	2456	360	1794	1022	2816
	87.22	12.78	63.71	36.29	100.00
012	8205	23	4559	3669	8228
	99.72	0.28	55.41	44.59	100.00
013	5670	432	4615	1487	6102
	92.92	7.08	75.63	24.37	100.00
014	730	281	732	279	1011
	72.21	27.79	72.40	27.60	100.00
015	4788	1701	3735	2754	6489
	73.79	26.21	57.56	42.44	100.00
016	720	7	614	113	727
	99.04	0.96	84.46	15.54	100.00
017	1510	711	1369	852	2221
	67.99	32.01	61.64	38.36	100.00
018	2594	0	1952	642	2594
	100.00	0.00	75.25	24.75	100.00

Sample Sizes by Total, Gender and Race for Each Family (25 Families)

019	10228	1073	7991	3310	11301
	90.51	9.49	70.71	29.29	100.00
020	8044	41	6776	1309	8085
	99.49	0.51	83.81	16.19	100.00
021	711	52	650	113	763
	93.18	6.82	85.19	14.81	100.00
022	3890	200	3223	867	4090
	95.11	4.89	78.80	21.20	100.00
023	9616	540	7501	2655	10156
	94.68	5.32	73.86	26.14	100.00
024	7372	1105	5566	2911	8477
	86.96	13.04	65.66	34.34	100.00
025	687	877	795	769	1564
	43.93	56.07	50.83	49.17	100.00
Totals:	75046	8086	58435	24697	83132
	90.27	9.73	70.29	29.71	100.00

Appendix G1

MPPs and SDs for the 9-Test Battery for Females, Blacks and Total (66 MOS)

MOS	Female %	Black %	Female MPP/SD	Black MPP/SD	Total MPP/SD
11B	0.00	16.73	0.000000	-0.415562	-0.086274
			0.000000	0.080420	0.011707
11C	0.00	15.35	0.000000	-0.589823	-0.227501
			0.000000	0.126196	0.040392
11H	0.00	15.01	0.000000	-0.387578	-0.171777
			0.000000	0.152727	0.040960
11M	0.00	18.29	0.000000	-0.475739	-0.237380
			0.000000	0.087708	0.029271
12C	0.00	17.84	0.000000	-0.342468	0.060281
			0.000000	0.144768	0.039114
13B	0.00	45.76	0.000000	-0.295639	-0.011699
			0.000000	0.072337	0.005879
13F	0.00	18.54	0.000000	-0.228723	0.175836
			0.000000	0.222129	0.096578
13M	58.06	66.83	-0.073682	-0.156636	-0.079839
			0.203254	0.136890	0.083503
13N	20.66	60.84	-0.385486	-0.547424	-0.429169
			0.379277	0.220320	0.143234
13R	6.36	42.21	-0.352935	-0.460709	-0.307133
			0.282372	0.228932	0.176015
16D	10.44	34.33	-0.019230	0.055870	0.546871
			0.048336	0.266950	0.459043
16P	4.14	26.40	-0.020893	-0.136361	0.193467
			0.052527	0.262957	0.242226
16R	1.76	36.11	-0.032767	-0.026072	0.330647
			0.084064	0.257941	0.167055
16S	23.84	61.19	-0.133873	-0.199946	-0.075359
			0.185385	0.109071	0.086237
19E	0.00	18.47	0.000000	-0.298359	-0.053449
			0.000000	0.287944	0.128287
19K	0.00	17.11	0.000000	-0.386012	0.022526
			0.000000	0.177422	0.085914
29E	12.68	2.85	0.595970	0.230935	1.577863

			0.703855	0.531937	0.166255
29J	12.27	9.12	0.410035	0.435275	0.962356
			0.480085	0.541891	0.171819
29N	37.63	42.22	-0.013812	-0.165723	0.025787
			0.311303	0.267224	0.173803
29V	43.48	19.50	0.918086	0.288290	1.089737
			0.499806	0.427225	0.166169
31C	12.30	50.46	-0.129551	-0.192836	0.080935
			0.367405	0.133457	0.092442
31K	8.38	60.58	-0.137817	-0.214838	-0.004416
			0.405533	0.160280	0.077437
31L	0.66	40.96	-0.020345	-0.251802	-0.119941
			0.074854	0.156874	0.072695
31V	2.17	38.39	-0.083778	-0.300173	-0.082716
			0.221499	0.126767	0.063075
33T	17.55	24.93	-0.249257	-0.226420	0.689244
			0.316811	0.304909	0.468491
35K	24.05	69.75	-0.191562	-0.293079	-0.231917
			0.295065	0.190111	0.164766
43E	5.14	61.02	-0.083092	-0.355372	-0.293196
			0.182490	0.158401	0.113987
44B	1.31	12.29	0.018680	0.104145	0.856720
			0.083540	0.213075	0.245881
44E	2.50	7.78	-0.006790	0.076823	0.972389
			0.030366	0.238563	0.497123
45K	2.15	9.89	0.031903	-0.054326	0.403425
			0.116456	0.384391	0.210535
51B	15.27	37.62	-0.120160	-0.151674	0.236689
			0.260055	0.292092	0.235106
52D	0.53	1.98	0.094817	0.285056	1.461626
			0.348652	0.540372	0.072575
54B	0.59	3.54	0.049830	0.191196	0.944632
			0.131401	0.328068	0.097346
55B	24.66	36.92	0.010053	-0.108853	0.261113
			0.438761	0.319700	0.264857
62B	1.10	6.42	0.000180	0.030384	0.571443

			0.000805	0.128665	0.162932
62E	0.00	6.54	0.000000	0.089740	0.649902
			0.000000	0.244308	0.144456
62J	7.33	35.40	-0.138348	-0.397110	-0.356949
			0.235208	0.418370	0.261352
63B	0.32	4.79	0.036698	0.508000	0.946061
			0.164116	0.483687	0.063898
63E	0.41	9.38	0.007302	0.105205	0.567764
			0.032658	0.310545	0.161116
63G	15.02	26.16	0.008245	-0.000803	0.288264
			0.106436	0.199617	0.416759
63S	0.00	4.76	0.000000	0.127372	0.633181
			0.000000	0.280231	0.111506
63T	0.00	9.23	0.000000	0.086577	0.431356
			0.000000	0.343058	0.094497
67V	4.21	32.37	-0.213807	-0.198262	0.129199
			0.245660	0.223703	0.087542
68B	20.02	78.17	-0.123115	-0.262201	-0.313457
			0.271010	0.245125	0.219870
68G	10.04	33.74	0.060770	0.112281	0.610858
			0.173329	0.285093	0.443404
68J	35.20	60.19	-0.309051	-0.508765	-0.423308
			0.339662	0.272535	0.229916
71D	34.26	41.03	0.385451	0.141583	0.688071
			0.442521	0.455936	0.374040
71L	56.12	42.58	0.339021	0.167016	0.343666
			0.185626	0.208484	0.142010
71M	43.94	43.99	-0.004137	-0.106238	-0.065834
			0.410341	0.303751	0.377511
72E	22.01	57.11	-0.253897	-0.440546	-0.294705
			0.243595	0.101786	0.046002
72G	59.03	77.89	0.066411	-0.040689	-0.003957
			0.213197	0.174003	0.122420
73C	47.17	83.29	0.258960	0.200701	0.225455
			0.254000	0.164434	0.169542
74D	49.94	53.78	0.063481	0.036571	0.263967

			0.273139	0.240130	0.422323
75B	38.62	37.46	0.633681	0.473934	0.757824
			0.317323	0.384769	0.179415
75D	30.53	91.08	-0.072995	-0.218887	-0.178358
			0.254632	0.238350	0.174802
76C	23.91	56.34	0.219348	0.113034	0.301317
			0.264418	0.125510	0.114741
76Y	43.89	71.44	-0.052406	-0.130047	-0.040478
			0.116815	0.059318	0.017145
77F	2.66	4.34	0.135933	0.174896	0.995863
			0.317592	0.359339	0.093165
81E	11.70	21.31	0.126236	-0.001869	0.721906
			0.318134	0.336990	0.438956
84B	7.55	30.20	-0.031463	-0.124823	0.043322
			0.134358	0.325666	0.672003
84F	17.26	51.50	-0.048885	-0.188436	-0.326896
			0.244446	0.314302	0.389942
88H	25.55	71.47	-0.213491	-0.236310	-0.182454
			0.183807	0.118297	0.106288
88M	2.98	13.10	-0.035546	-0.095653	0.324968
			0.206517	0.242934	0.084660
91A	14.63	34.75	-0.262887	-0.386497	-0.064479
			0.199684	0.077256	0.019225
94B	25.73	50.66	-0.149118	-0.268284	-0.007430
			0.245334	0.106657	0.014202
95B	19.19	23.33	0.165855	0.013511	0.351222
			0.263929	0.224279	0.090011

Appendix G2

MPPs and SDs for the 8-Test Battery for Females, Blacks and Total, Without NO (66 MOS)

MOS	Female %	Black %	Female MPP/SD	Black MPP/SD	Total MPP/SD
11B	0.00	16.73	0.000000	-0.392004	-0.079329
			0.000000	0.075609	0.011257
11C	0.00	15.35	0.000000	-0.520705	-0.202632
			0.000000	0.136385	0.038820
11H	0.00	15.01	0.000000	-0.371611	-0.169959
			0.000000	0.170535	0.045161
11M	0.00	18.29	0.000000	-0.474737	-0.238176
			0.000000	0.098665	0.026578
12C	0.00	17.87	0.000000	-0.308331	0.072729
			0.000000	0.138025	0.044360
13B	0.00	45.75	0.000000	-0.295372	-0.012356
			0.000000	0.068540	0.008266
13F	0.00	18.54	0.000000	-0.226988	0.139446
			0.000000	0.234683	0.106994
13M	57.55	65.42	-0.110422	-0.142339	-0.062119
			0.142060	0.181579	0.078404
13N	17.66	54.48	-0.350177	-0.583260	-0.471271
			0.345282	0.233721	0.117759
13R	2.42	42.92	-0.132325	-0.316499	-0.140120
			0.249538	0.244386	0.163064
16D	0.00	18.16	0.000000	0.048042	0.471807
			0.000000	0.168214	0.483645
16P	3.41	26.39	-0.059025	-0.244755	0.145744
			0.137379	0.273539	0.210868
16R	2.76	39.22	-0.054038	-0.087632	0.227148
			0.111810	0.225537	0.166745
16S	24.20	60.28	-0.142714	-0.211329	-0.072143
			0.201362	0.133213	0.076830
19E	0.00	19.50	0.000000	-0.424672	-0.073357
			0.000000	0.291764	0.136871
19K	0.00	17.86	0.000000	-0.448446	0.026087
			0.000000	0.165523	0.074855

29E	11.76	2.54	0.587661	0.231830	1.589171
			0.735062	0.534664	0.153293
29J	11.57	7.51	0.457258	0.408470	0.987664
			0.493876	0.558382	0.156886
29N	37.05	42.93	-0.018964	-0.193791	0.003852
			0.273025	0.267942	0.180319
29V	44.98	16.36	0.989885	0.388243	1.196017
			0.507286	0.517080	0.248317
31C	12.82	51.04	-0.170538	-0.154846	0.114444
			0.351379	0.135348	0.099032
31K	8.06	61.83	-0.092616	-0.217307	0.005883
			0.343680	0.152440	0.070263
31L	0.91	43.34	-0.035862	-0.295321	-0.105529
			0.173832	0.157391	0.058225
31V	2.92	42.60	-0.109459	-0.339354	-0.098828
			0.266782	0.092506	0.044810
33T	18.02	24.09	-0.206220	-0.259310	0.710177
			0.273589	0.305712	0.431183
35K	28.01	76.09	-0.208469	-0.323322	-0.275944
			0.295844	0.130524	0.139224
43E	4.24	63.06	-0.039442	-0.356382	-0.296140
			0.132273	0.155689	0.106199
44B	1.31	8.08	0.018680	0.091753	0.848264
			0.083540	0.255032	0.204557
44E	2.50	8.15	-0.006790	0.081880	0.966950
			0.030366	0.271635	0.496569
45K	3.92	11.20	0.011400	0.009563	0.404914
			0.129883	0.288033	0.201054
51B	2.27	34.07	0.007773	-0.139711	0.161910
			0.150499	0.254776	0.124032
52D	0.73	1.41	0.094817	0.166459	1.479318
			0.348652	0.455519	0.067521
54B	0.82	3.60	0.020723	0.226272	0.915029
			0.124175	0.389807	0.095040
55B	29.37	40.36	0.024841	-0.140383	0.188912
			0.409938	0.261530	0.205913

62B	0.73	8.59	0.000180	0.040000	0.595174
			0.000805	0.150218	0.170293
62E	0.62	7.97	0.040875	0.064050	0.569122
			0.126450	0.284238	0.171953
62J	11.54	35.00	-0.202648	-0.408492	-0.357015
			0.250067	0.418050	0.250397
63B	0.48	4.19	0.057865	0.430113	0.954946
			0.204426	0.471127	0.063556
63E	0.41	9.93	0.007302	0.049041	0.602062
			0.032658	0.338259	0.145041
63G	11.02	24.05	-0.004365	-0.032525	0.273597
			0.089624	0.218597	0.413655
63S	0.17	2.87	0.006405	0.082485	0.641099
			0.028644	0.225101	0.116043
63T	0.25	9.13	-0.004245	0.020478	0.425716
			0.017558	0.320852	0.090032
67V	2.84	33.48	-0.102955	-0.173917	0.145732
			0.254798	0.226970	0.097241
68B	16.70	67.29	-0.139563	-0.342288	-0.358536
			0.261857	0.219266	0.191453
68G	6.76	33.20	0.049142	0.132431	0.646250
			0.162950	0.281123	0.416651
68J	27.47	53.76	-0.172109	-0.403735	-0.268858
			0.338039	0.285415	0.246154
71D	29.32	53.59	0.312005	0.115104	0.538929
			0.396713	0.419065	0.351082
71L	55.75	41.52	0.278766	0.127511	0.318134
			0.184768	0.220268	0.129057
71M	36.24	47.64	-0.018439	-0.071918	-0.030402
			0.363294	0.343215	0.391636
72E	23.94	57.92	-0.373890	-0.462279	-0.292500
			0.207661	0.113155	0.036554
72G	56.50	80.05	0.086127	-0.037733	-0.003371
			0.245191	0.161924	0.107857
73C	54.51	81.63	0.243311	0.188440	0.225986
			0.202709	0.176848	0.160222

74D	44.59	52.72	0.058518	0.034427	0.269307
			0.265782	0.230401	0.412341
75B	40.67	41.95	0.597025	0.451875	0.719254
			0.316048	0.364644	0.194063
75D	28.27	83.46	-0.050487	-0.205996	-0.138001
			0.299759	0.220713	0.146416
76C	25.52	58.39	0.161998	0.123675	0.285537
			0.259406	0.152173	0.128100
76Y	44.36	69.44	-0.039640	-0.132960	-0.040197
			0.127572	0.074028	0.016768
77F	2.45	3.53	0.135933	0.136734	0.983687
			0.317592	0.302689	0.090652
81E	9.71	25.94	0.064663	-0.056028	0.624076
			0.232177	0.388067	0.442531
84B	10.06	31.52	-0.008055	-0.043983	0.208314
			0.111159	0.300667	0.630786
84F	16.99	54.07	-0.122935	-0.298434	-0.441869
			0.228113	0.383077	0.375296
88H	24.45	68.76	-0.120135	-0.165366	-0.111081
			0.164098	0.106306	0.088942
88M	2.46	12.31	-0.056239	-0.074518	0.322124
			0.265992	0.236094	0.102552
91A	15.31	33.81	-0.286619	-0.413798	-0.065406
			0.187445	0.094837	0.014173
94B	22.42	49.83	-0.171597	-0.257645	-0.006322
			0.238571	0.108347	0.012174
95B	19.69	22.38	0.103592	0.009392	0.343252
			0.227336	0.236535	0.104872

Appendix G3

MPPs and SDs for the 8-Test Battery for Females, Blacks and Total, Without CS (66 MOS)

MOS	Female %	Black %	Female MPP/SD	Black MPP/SD	Total MPP/SD
11B	0.00	16.73	0.000000	-0.402118	-0.067295
			0.000000	0.074564	0.011475
11C	0.00	15.35	0.000000	-0.539612	-0.201863
			0.000000	0.145655	0.036813
11H	0.00	15.01	0.000000	-0.385982	-0.163707
			0.000000	0.181217	0.039606
11M	0.00	18.29	0.000000	-0.463596	-0.225419
			0.000000	0.084254	0.025403
12C	0.00	17.87	0.000000	-0.401096	0.044625
			0.000000	0.120872	0.046911
13B	0.00	45.55	0.000000	-0.276805	-0.007102
			0.000000	0.067766	0.005430
13F	0.00	18.54	0.000000	-0.258761	0.140754
			0.000000	0.199780	0.100825
13M	57.15	68.84	-0.165126	-0.247223	-0.153550
			0.230495	0.149901	0.107948
13N	22.24	56.39	-0.386448	-0.565711	-0.409183
			0.347460	0.215089	0.161560
13R	6.16	41.51	-0.290185	-0.489277	-0.384470
			0.273050	0.205887	0.144105
16D	4.99	20.50	-0.007355	0.062145	0.587115
			0.025958	0.191329	0.385656
16P	1.26	24.15	-0.026697	-0.268850	0.001990
			0.086862	0.268454	0.219772
16R	2.94	36.73	-0.041513	-0.016160	0.314651
			0.080764	0.262587	0.156311
16S	30.52	55.42	-0.147111	-0.224431	-0.094950
			0.220892	0.106231	0.078745
19E	0.00	18.77	0.000000	-0.383674	-0.106393
			0.000000	0.236834	0.124997
19K	0.00	17.02	0.000000	-0.367851	0.002032
			0.000000	0.162981	0.109695

29E	9.91	5.25	0.524214	0.348367	1.485819
			0.706021	0.592734	0.180951
29J	12.48	7.26	0.448340	0.321899	1.024976
			0.520271	0.491426	0.141696
29N	32.64	45.13	-0.099520	-0.264487	-0.089591
			0.308079	0.317103	0.208232
29V	49.30	19.38	0.975259	0.357460	1.052591
			0.425075	0.545508	0.173302
31C	13.05	51.70	-0.120921	-0.230152	0.030876
			0.298351	0.136828	0.079202
31K	7.22	58.56	-0.041544	-0.225660	-0.002630
			0.249136	0.143494	0.072049
31L	1.20	39.95	-0.016488	-0.286856	-0.106814
			0.137879	0.147352	0.051296
31V	1.91	35.23	-0.089205	-0.299905	-0.086655
			0.216792	0.125870	0.050328
33T	11.14	24.15	-0.122359	-0.222389	0.600128
			0.318812	0.313411	0.410498
35K	30.11	71.56	-0.272904	-0.364773	-0.297549
			0.201719	0.153207	0.134804
43E	5.31	60.36	-0.082202	-0.327624	-0.297434
			0.205912	0.173870	0.105724
44B	2.53	10.16	0.015277	0.088702	0.857249
			0.085698	0.238558	0.256031
44E	3.04	11.31	0.032705	0.075360	0.816464
			0.106803	0.229672	0.468901
45K	5.11	8.21	-0.009192	-0.041986	0.391197
			0.248500	0.315862	0.191929
51B	9.87	34.67	-0.103345	-0.049342	0.290793
			0.275943	0.337006	0.226492
52D	0.49	1.85	0.078165	0.242906	1.511872
			0.349565	0.541407	0.063706
54B	1.26	3.15	0.082337	0.159083	0.949387
			0.171591	0.283386	0.097229
55B	25.57	49.76	-0.030637	-0.193064	0.051878
			0.383468	0.276757	0.160176

62B	1.10	5.27	0.000180	0.068653	0.533089
			0.000805	0.180845	0.175223
62E	1.81	6.28	0.040570	0.135260	0.657668
			0.152509	0.244000	0.146954
62J	4.33	31.57	-0.058740	-0.361741	-0.327796
			0.159008	0.419141	0.272273
63B	0.16	3.13	0.018110	0.409778	0.963965
			0.080991	0.485119	0.059307
63E	0.41	8.69	0.007302	0.093422	0.573235
			0.032658	0.304256	0.146089
63G	8.86	13.28	-0.010842	-0.026517	0.108523
			0.096243	0.170255	0.373858
63S	0.00	4.22	0.000000	0.100666	0.605573
			0.000000	0.248692	0.118643
63T	0.25	9.70	0.015180	0.038421	0.412801
			0.067887	0.291471	0.098600
67V	4.54	34.05	-0.243615	-0.207138	0.116355
			0.319569	0.197932	0.067796
68B	19.66	70.06	-0.117362	-0.195171	-0.269473
			0.289818	0.275315	0.214523
68G	14.77	26.99	0.069415	0.106058	0.635063
			0.277406	0.324321	0.500382
68J	30.41	61.86	-0.275054	-0.496695	-0.416265
			0.362096	0.268276	0.246624
71D	30.72	45.93	0.355962	0.161964	0.607536
			0.500262	0.461114	0.380417
71L	48.11	45.47	0.276689	0.036638	0.237494
			0.184111	0.203832	0.131298
71M	39.98	45.14	0.037395	-0.157902	-0.024321
			0.380692	0.381395	0.436118
72E	20.43	58.88	-0.234325	-0.410872	-0.267440
			0.243200	0.089838	0.043040
72G	56.40	81.93	0.131134	-0.026831	0.025465
			0.268528	0.181817	0.132755
73C	50.81	79.93	0.238503	0.191564	0.221996
			0.183833	0.204454	0.158415

74D	41.62	55.19	0.091396	0.023026	0.238148
			0.313801	0.257025	0.414224
75B	43.02	46.64	0.578084	0.436619	0.677253
			0.297401	0.270471	0.194972
75D	44.15	76.72	-0.081495	-0.216180	-0.179013
			0.272039	0.192612	0.154314
76C	25.40	52.59	0.203990	0.123336	0.299979
			0.263636	0.154655	0.126807
76Y	45.34	73.44	-0.032092	-0.115389	-0.029511
			0.095530	0.064620	0.027077
77F	1.77	2.71	0.083796	0.177390	1.021171
			0.263614	0.342023	0.070862
81E	3.38	36.00	0.056049	-0.043833	0.431181
			0.226412	0.417205	0.538528
84B	10.07	27.69	-0.046960	-0.078050	0.099388
			0.171702	0.234094	0.604568
84F	17.80	72.13	-0.172651	-0.583770	-0.770621
			0.317682	0.444050	0.286409
88H	26.23	71.56	-0.066425	-0.152689	-0.089656
			0.167674	0.088856	0.080293
88M	3.83	14.73	-0.052594	-0.103307	0.286480
			0.220140	0.269201	0.098083
91A	14.25	34.77	-0.291905	-0.390647	-0.066821
			0.167094	0.064775	0.025285
94B	26.73	42.94	-0.167182	-0.307221	-0.007770
			0.228768	0.103171	0.012449
95B	18.54	26.20	0.145773	0.013049	0.308948
			0.320647	0.214986	0.091057

Appendix G4

MPPs and SDs for the 7-Test Battery for Females, Blacks and Total, Without NO and CS (66 MOS)

MOS	Female %	Black %	Female MPP/SD	Black MPP/SD	Total MPP/SD
11B	0.00	16.73	0.000000	-0.321035	-0.001354
			0.000000	0.079565	0.005527
11C	0.00	15.21	0.000000	-0.289965	-0.002742
			0.000000	0.143651	0.025451
11H	0.00	15.01	0.000000	-0.166452	0.005276
			0.000000	0.146448	0.023215
11M	0.00	18.29	0.000000	-0.230159	0.001317
			0.000000	0.082978	0.009019
12C	0.00	17.91	0.000000	-0.163020	0.247341
			0.000000	0.152161	0.057114
13B	0.00	44.98	0.000000	-0.275949	-0.000297
			0.000000	0.070060	0.005484
13F	0.00	18.41	0.000000	-0.220217	0.195709
			0.000000	0.213691	0.090937
13M	55.98	67.39	0.047876	-0.081672	0.034146
			0.216937	0.247240	0.125368
13N	15.80	56.34	-0.062060	-0.175944	0.039981
			0.241532	0.205995	0.071440
13R	4.05	39.52	0.042592	0.145865	0.479590
			0.110044	0.195838	0.140112
16D	5.26	17.05	0.055235	0.079970	0.784583
			0.245696	0.239718	0.420295
16P	4.70	31.80	-0.032235	-0.082675	0.502666
			0.100699	0.176224	0.210566
16R	3.50	43.80	-0.004420	0.043966	0.358608
			0.036420	0.248241	0.173781
16S	37.27	50.63	-0.055678	-0.119358	0.012637
			0.192105	0.182207	0.031753
19E	0.00	20.27	0.000000	-0.265563	0.045209
			0.000000	0.266024	0.125820
19K	0.00	17.19	0.000000	-0.308360	0.142106
			0.000000	0.143601	0.095944

29E	8.21	7.70	0.536744	0.445052	1.574413
			0.728066	0.665284	0.140595
29J	12.63	6.68	0.733254	0.433495	1.376260
			0.686149	0.648532	0.090793
29N	37.05	46.28	0.308047	0.201616	0.393894
			0.281234	0.262322	0.180722
29V	42.41	25.79	0.964562	0.389022	1.100890
			0.530418	0.470912	0.224726
31C	14.32	49.00	-0.109159	-0.075329	0.189742
			0.262323	0.156158	0.098175
31K	12.84	59.10	-0.177037	-0.197813	0.025892
			0.347082	0.170977	0.058628
31L	2.85	40.95	-0.040227	-0.190768	0.002784
			0.181810	0.169127	0.034524
31V	3.23	38.19	-0.133738	-0.235088	0.011222
			0.253195	0.115708	0.026012
33T	5.31	26.43	0.354181	0.543447	1.789458
			0.429434	0.303993	0.284407
35K	37.44	81.74	-0.051871	0.019104	0.061202
			0.193566	0.130968	0.090810
43E	4.09	57.58	-0.018775	-0.092799	0.008275
			0.129310	0.121864	0.049919
44B	1.31	6.41	0.028350	0.089188	0.977770
			0.126785	0.251837	0.222331
44E	8.03	4.99	0.139302	0.068056	1.472303
			0.290942	0.304356	0.287320
45K	4.53	8.84	0.107564	0.282412	0.941187
			0.181710	0.415309	0.163671
51B	6.04	26.36	-0.057815	-0.037983	0.296140
			0.241626	0.240399	0.153327
52D	0.42	1.97	0.115742	0.210721	1.541971
			0.410008	0.517242	0.053134
54B	1.51	3.48	0.065171	0.201624	0.937015
			0.181902	0.329456	0.085368
55B	26.77	52.73	-0.051433	-0.200089	0.027618
			0.320593	0.224850	0.109046

62B	1.10	5.76	0.006907	0.107283	0.794218
			0.030891	0.265714	0.162147
62E	0.72	8.25	0.010200	0.149589	0.786285
			0.045616	0.238495	0.128980
62J	10.66	27.91	0.090030	0.105163	0.540370
			0.165180	0.233301	0.232717
63B	0.16	2.84	0.018587	0.367809	0.974789
			0.083126	0.479045	0.063371
63E	0.41	8.62	0.018388	0.382422	1.051130
			0.082231	0.480476	0.123992
63G	5.00	12.17	0.033185	0.020598	0.290542
			0.116236	0.152166	0.324533
63S	0.00	3.01	0.000000	0.051978	0.667075
			0.000000	0.187010	0.123448
63T	0.25	10.52	0.019127	0.168945	0.542094
			0.085541	0.278164	0.094232
67V	3.27	32.26	-0.045346	0.150453	0.592271
			0.117498	0.276110	0.077053
68B	29.42	57.30	0.167163	0.277710	0.409210
			0.232843	0.303506	0.223093
68G	10.05	18.31	0.160048	0.059396	1.157350
			0.329348	0.165880	0.367607
68J	30.47	60.45	0.256895	0.172204	0.339041
			0.299623	0.154557	0.183285
71D	27.96	58.27	0.464572	0.447946	0.986496
			0.514639	0.481989	0.276211
71L	48.22	51.79	0.543669	0.344680	0.544082
			0.246781	0.178241	0.151109
71M	42.63	49.11	0.307704	0.229891	0.454192
			0.396297	0.324551	0.258261
72E	24.90	57.59	-0.128359	-0.195108	-0.003098
			0.188893	0.099570	0.016204
72G	55.23	81.44	0.154605	0.002919	0.067869
			0.233197	0.178164	0.108938
73C	49.76	86.09	0.298132	0.221517	0.249263
			0.264185	0.160822	0.159240

74D	37.03	58.03	0.229942	0.223868	0.615755
			0.348589	0.375738	0.433854
75B	40.34	49.31	0.710553	0.521915	0.745337
			0.329735	0.288701	0.213595
75D	29.80	72.28	-0.002535	-0.079878	0.071659
			0.263623	0.266651	0.135877
76C	29.22	47.41	0.286534	0.124724	0.337936
			0.287935	0.156388	0.139420
76Y	40.36	73.05	0.031570	-0.089480	-0.002247
			0.092493	0.058474	0.026667
77F	1.88	1.74	0.131955	0.117942	1.085138
			0.218083	0.296302	0.074093
81E	9.35	38.83	0.210487	0.407548	1.089606
			0.457691	0.513292	0.391936
84B	5.03	42.78	0.032730	0.450372	1.271752
			0.146373	0.580885	0.405199
84F	24.34	72.44	0.111763	0.151016	0.374130
			0.219010	0.339306	0.354687
88H	22.22	71.23	0.025191	-0.019707	0.043714
			0.184914	0.134978	0.092163
88M	2.88	11.24	0.023249	-0.026814	0.339979
			0.250314	0.292665	0.106948
91A	12.99	33.51	-0.200502	-0.342152	0.003619
			0.226606	0.069749	0.013536
94B	25.66	44.84	-0.157853	-0.279115	0.002692
			0.247718	0.108156	0.016404
95B	17.36	27.88	0.191983	0.150286	0.479100
			0.281235	0.210014	0.084312